

DRAFT  
ENVIRONMENTAL IMPACT REPORT

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EMERYVILLE BAYFRONT  
SPECIFIC PLAN

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EMERYVILLE REDEVELOPMENT AGENCY

NOVEMBER 1985





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ENVIRONMENTAL IMPACT REPORT

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# EMERYVILLE BAYFRONT SPECIFIC PLAN

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## TABLE OF CONTENTS

|                                                    | <u>Page</u> |
|----------------------------------------------------|-------------|
| SUMMARY                                            |             |
| A. Project Description.....                        | S-1         |
| B. Impact Assessment and Mitigation Measures ..... | S-2         |
| C. Significant Long-Term Impacts.....              | S-11        |
| D. Alternatives .....                              | S-13        |
| <br>I. INTRODUCTION                                |             |
| A. Authorization and Purpose.....                  | I-1         |
| B. Project Description.....                        | I-12        |
| C. Organization of the EIR .....                   | I-18        |
| <br>II. ENVIRONMENTAL SETTING                      |             |
| A. Population and Housing .....                    | II-1        |
| B. Employment .....                                | II-2        |
| C. Land Use.....                                   | II-2        |
| D. Urban Design .....                              | II-4        |
| E. Circulation .....                               | II-8        |
| F. Public Facilities and Services .....            | II-14       |
| G. Public Utilities .....                          | II-16       |
| H. Energy.....                                     | II-18       |
| I. Geology.....                                    | II-18       |
| J. Hazardous Substances.....                       | II-22       |
| K. Noise .....                                     | II-26       |
| L. Air Quality .....                               | II-27       |
| M. Water Quality .....                             | II-30       |
| N. Plant and Animal Communities.....               | II-31       |
| O. Cultural Resources .....                        | II-32       |

|      |                                                          |        |
|------|----------------------------------------------------------|--------|
| III. | ENVIRONMENTAL IMPACTS AND MITIGATION                     |        |
| A.   | Introduction .....                                       | III-1  |
| B.   | Population and Housing .....                             | III-2  |
| C.   | Employment .....                                         | III-4  |
| D.   | Land Use .....                                           | III-5  |
| E.   | Urban Design .....                                       | III-8  |
| F.   | Circulation .....                                        | III-9  |
| G.   | Public Facilities and Services .....                     | III-16 |
| H.   | Public Utilities .....                                   | III-18 |
| I.   | Energy .....                                             | III-21 |
| J.   | Geology .....                                            | III-24 |
| K.   | Hazardous Substances .....                               | III-25 |
| L.   | Noise .....                                              | III-27 |
| M.   | Air Quality .....                                        | III-33 |
| N.   | Water Quality .....                                      | III-35 |
| O.   | Plant and Animal Communities .....                       | III-36 |
| P.   | Cultural Resources .....                                 | III-37 |
| IV.  | SIGNIFICANT LONG-TERM IMPACTS                            |        |
| A.   | Significant Irreversible Environmental Changes .....     | IV-1   |
| B.   | Growth-Inducing Impacts .....                            | IV-3   |
| C.   | Cumulative Impacts .....                                 | IV-3   |
| V.   | ALTERNATIVES                                             |        |
| A.   | Description of Alternatives .....                        | V-1    |
| B.   | Comparative Evaluation of Alternatives .....             | V-1    |
| VI.  | EIR AUTHORS AND CONSULTANTS                              |        |
| A.   | Author .....                                             | VI-1   |
| B.   | Consultants .....                                        | VI-1   |
| C.   | Individuals, Agencies, and Organizations Consulted ..... | VI-2   |
| VII. | REFERENCES                                               |        |
|      | APPENDIX A: Traffic Analysis                             |        |
|      | APPENDIX B: Caline 3 Model and Assumptions               |        |
|      | APPENDIX C: Fundamental Concepts of Environmental Noise  |        |
|      | APPENDIX D: Transportation Systems Management            |        |
|      | APPENDIX E: Energy Conservation Techniques               |        |
|      | APPENDIX F: Noise Abatement Measures                     |        |
|      | APPENDIX G: CEQA Archaeological Resources Guidelines     |        |



## LIST OF FIGURES

|                                                                       | <u>Page</u> |
|-----------------------------------------------------------------------|-------------|
| I-1 Regional Location .....                                           | I-3         |
| I-2 City Setting .....                                                | I-4         |
| I-3 Land Use Element .....                                            | I-7         |
| I-4 Development Areas and Parcel Reference .....                      | I-9         |
| II-1 Existing Land Use, 1984 .....                                    | II-5        |
| II-2 Regional Physical Setting .....                                  | II-7        |
| II-3 Existing Circulation System and Traffic Levels, 1984.....        | II-11       |
| II-4 Environmental Hazards .....                                      | II-23       |
| III-1 Circulation Element and Projected Traffic Levels .....          | III-13      |
| III-2 Alternative Interchange Schemes and Interchange Locations ..... | III-12      |
| III-3 Projected Noise Levels.....                                     | III-29      |



## LIST OF TABLES

|                                                                                  | <u>Page</u> |
|----------------------------------------------------------------------------------|-------------|
| I-1 Proposed Land Uses .....                                                     | I-6         |
| I-2 Land Use Matrix .....                                                        | I-11        |
| I-3 Space and Site Requirements Matrix .....                                     | I-13        |
| I-4 FAR Factors .....                                                            | I-15        |
| I-5 Example Using Base, Standard, and Bonus FARs .....                           | I-16        |
| II-1 Employment by Industry, 1984 .....                                          | II-3        |
| II-2 Intersection Volume/Capacity Ratios<br>and Levels-of-Service, 1984 .....    | II-10       |
| II-3 Future Transportation Improvements.....                                     | II-13       |
| II-4 Major Facilities Emitting Air Pollutants .....                              | II-30       |
| III-1 Future Intersection Volume/Capacity<br>Ratios and Levels-of-Service .....  | III-10      |
| III-2 Peak Period Transit Ridership.....                                         | III-15      |
| III-3 Water and Wastewater Flows .....                                           | III-20      |
| III-4 Motor Vehicle Fuel Consumption .....                                       | III-22      |
| III-5 Energy Consumption .....                                                   | III-23      |
| III-6 Compatibility Standards for<br>Community Noise Environments.....           | III-28      |
| III-7 Corrections to be Added to the Measured<br>CNEL to Obtain Normal CNEL..... | III-31      |
| III-8 Predicted Worst-Case Carbon Monoxide Concentrations .....                  | III-34      |

## SUMMARY

### A. PROJECT DESCRIPTION

The proposed project is a specific plan which would permit residential, retail, and office development in the Emeryville Bayfront area. The project is not an individual development proposal. It is a regulatory document which specifies locations and standards for land uses, buildings, streets and public utilities. The Bayfront Specific Plan contains provisions for open space, roadways, sewer and stormwater drainage systems, and bicycle and pedestrian circulation.

The Specific Plan was prepared in consultation with the team preparing the City's General Plan; once the General Plan is completed, the Specific Plan must be consistent with it. Future development projects submitted for the Bayfront area must be found consistent with the Specific Plan in order to be approved. Supplemental EIRs must be written to address the localized impacts which are not appropriate for discussion in this report.

The Bayfront is located in Alameda County within the City of Emeryville, east of Interstate 80 (I-80) and west of the Southern Pacific railroad tracks. It is generally bounded on the north by the Ashby Street exit of I-80 and on the south by the I-80/I-580 interchange. Its primary access point is Powell Street.

The project area of approximately 134 acres is primarily industrial. Current zoning is extremely flexible; there are no regulations guiding height, lot coverage, parking or land uses. The Specific Plan describes allowable land uses, development intensities, parking requirements, height limitations, and land dedications for roadways and open space. Approximately 39 acres are designated for offices, 21 acres for housing and 65 acres for mixed use, which can be a combination of office, retail or residential uses, and hotels, where permitted. Among these uses, the Plan permits, as an alternative, a regional shopping center. Hotels, cultural facilities, entertainment uses, retail and residential development are encouraged by development bonuses.

This EIR presents three theoretical development scenarios. This is necessary because the flexibility of the Specific Plan permits a wide range of development opportunities, and a single estimate of the allowable development potential would be speculative and misleading. The first scenario concerns the impacts associated with maximum office development, assuming housing in the remaining areas and a minimum amount of retail use. The second scenario assumes maximum residential development and minimum retail development, with offices in the remaining space. The third scenario maximizes office space and minimizes housing, this time assuming a regional retail option is exercised. The results of these three development scenarios indicate that between 385 and 4,292 dwelling units could be added to the Bayfront, with between 770 and 8,584 new residents; up to 12,000 new jobs could be added, primarily in the service and F.I.R.E. (Finance, Insurance, and Real Estate) sectors. The number of jobs could be as high as 18,000 if development bonuses are sought. The level of development represented by the three scenarios would only occur as a result of an intense demand for land, and only after development of highly efficient circulation and transit systems.



## B. IMPACT ASSESSMENT AND MITIGATION MEASURES

Three types of mitigation measures have been identified. The first type are those which are required by provisions of the Specific Plan. These are identified as measures included as part of the project. The second type of mitigation measures typically address project-specific design issues which are inappropriate at this level of discussion, or issues which the City of Emeryville may wish to address on a citywide basis. These are identified as measures to be considered. Finally, there are measures which are or will be implemented by another individual, organization or agency. These are labeled as measures to be performed by others.

### Population and Housing

**Impact Assessment.** The Specific Plan identifies areas appropriate for housing development. However, its flexible guidelines make it difficult to predict the number of units that actually would be built. At a minimum, 385, and at a maximum, 4,292 dwelling units could be constructed in the Bayfront. The actual number constructed would fall somewhere in between these extremes. The impact assessment examines the impacts that could result if either the minimum or maximum number of units were built. At the lower end of the scale, the project would not contribute significantly to the regional housing need. At the upper end of the scale, the number of units could accommodate up to 8,585 new residents, which would completely change the social character of the Bayfront and could potentially affect the entire city as well. By bringing significant numbers of additional residents into the City, the project could alter Emeryville's small town character. In addition, the demographic characteristics of the new residents, which cannot be predicted accurately, could be significantly different from those of the rest of the older portions of the community.

**Mitigation Included with Project.** Development bonuses encourage the construction of housing. The Bayfront would include many public amenities (such as pedestrian circulation links to the remainder of the City) and land uses which would attract members of the larger Emeryville community, thereby minimizing some of the problems which accompany rapid social change.

**Mitigation to be Considered.** Requirements for housing affordability and type could be imposed upon projects in the mixed-use areas as well as to housing areas. The minimum housing requirement could be applied to smaller parcels in the mixed-use areas, and upper limits could be placed on the total amount of housing permitted.

The City should examine the appropriateness of applying the housing assistance and construction programs described in the City's housing element to the Bayfront. Projects proposed in the Bayfront area must comply with the policies of the housing element.

### Employment

**Impact Assessment.** Development of the Bayfront according to the Specific Plan would eventually displace most of the Bayfront's existing 1,950 jobs. All of the 1,300

jobs in manufacturing, wholesale and trucking activities would eventually be displaced. This would largely be a result of market pressure, but the Plan would accelerate the process. Up to 12,000 new jobs, most of them in the F.I.R.E. and service sectors, could be located in the Bayfront. This figure could be closer to 18,000 jobs if TSM programs were developed for all office areas, and only the minimum amount of housing were built.

**Mitigation Included with Project.** The Specific Plan would provide development bonuses for retail, cultural, hotel, residential and entertainment uses, to assure some measure of employment diversity and support retail and services for office employees. Public action would not displace businesses. Existing industrial uses, which would be non-conforming under the Specific Plan, would be permitted to remain unless fire or natural disaster destroys greater than 50 percent of the building in which they are located.

**Mitigation to be Considered.** The City should identify areas within the City for relocation of displaced businesses.

## **Land Use**

**Impact Assessment.** The Specific Plan would permit almost complete redevelopment of the Bayfront area, altering the land use from the predominant manufacturing uses to more intensive office, commercial and residential uses. The Plan would allow flexibility in land uses: the areas designated for mixed use could be built as primarily offices, retail, housing, or some combination of these; the areas designated for housing may be developed as regional retail. Although the Specific Plan is flexible, actual development would be limited by the specific requirements of the Plan (such as height and floor area ratio limits) and by what the market would attract.

The office-emphasis scenario would result in land uses which are similar to those that are presently developing in the Peninsula and parts of the Bayfront. If more housing were to be built, the Bayfront would take on the character of an urban residential neighborhood. The retail options could add a regional shopping center to either the housing or office scenarios, reducing the total amount of office space or housing. Hotels could be built under all scenarios, in addition to the one which was recently completed.

All development that could ultimately result from the Specific Plan would represent a major change from existing land uses, and a significant intensification of development densities. If all parcels were to develop up to the bonus FAR, and if TSMs were implemented for all office development, over 6 million square feet of new uses could result. This amount of development is not expected. This situation would occur only as a result of an intense demand for land and only after the development of a highly efficient circulation and transit system.

A major benefit of the Specific Plan would be the requirement to provide a significant amount of open space: a certain percentage of each site must be devoted to publicly available and useable open space. As the area develops under the new requirements, the present industrial, visually chaotic image of the Bayfront would become one that is more attractive and organized in terms of community identity, circulation, and orientation.



Visual, noise, and land use conflicts are not expected with the ultimate land use pattern designated in the Plan. Some conflicts could occur before the Bayfront is entirely built out between new uses and those existing uses which generate noise, odor or dust.

**Mitigation Included with Project.** The Specific Plan specifies environmental performance standards to protect designated uses on sites adjoining commercial and industrial activities. Siting, landscaping and open space standards would assure that adjacent uses are physically and visually compatible. These standards could also help to minimize conflicts which might be experienced between new and presently existing uses; however, they could not completely eliminate these potential conflicts.

**Mitigation to be Considered.** During the project review process, the City would identify, on a case-by-case basis, individual projects which could potentially conflict with existing uses. Alternative design techniques, such as landscaping or noise barriers, could be suggested at that time.

## Urban Design

**Impact Assessment.** The Specific Plan would introduce dramatic changes in the existing character, scale and intensity of the Emeryville Bayfront, and could affect views from surrounding areas. Overall, the Bayfront would ultimately represent the regionally oriented portions of the larger Emeryville community. It would present a well-organized, aesthetically pleasing image of the City.

**Mitigation Included with Project.** Development standards contained within the Specific Plan describe height limits and permitted building materials. The Community Design Element of the Plan specifies the overall organization of the Bayfront area.

Taller buildings would be located where views from surrounding areas, such as the Berkeley Hills, have already been interrupted by existing buildings in the Bayfront and Peninsula. Views from the Bayfront area to landmarks such as the Claremont Hotel and the Campanile on the U.C. Berkeley campus would be protected. The Plan would provide more open space and a pedestrian-oriented circulation corridor running north-south through the project area. Development standards and height limits would assure the development of a pleasing, cohesive environment.

**Mitigation to be Considered.** The City could initiate a design review process to assure that individual projects are consistent with the objectives of the Specific Plan.

## Circulation

**Impact Assessment.** Development permitted by the Specific Plan would generate additional traffic in the Bayfront and in surrounding areas. The Plan proposes a pedestrian mall and bicycle/pedestrian road and rail crossings to encourage auto-free circulation throughout the Bayfront. Freeway improvements, including an HOV lane, will be made by Caltrans; the Plan provides for bus ingress and egress from the HOV lane. The internal circulation system would be improved to serve the new development, and all local road improvements are to be in place prior to development at higher intensities.

The increased traffic volumes would theoretically decrease the levels-of-service at some intersections. The worst of these would be along Powell Street, where levels-of-service "D" and "E" could be experienced during peak hours. The actual levels-of-service at these intersections are currently much lower than the calculated levels, however, due to the congestion on the freeway and interchanges, which backs up onto local streets and adversely affects their operation. With the HOV lane and improvements to the interchange and local intersections as proposed, the additional traffic generated by the project would not cause a deterioration of existing intersection operations.

The project would generate some demand for public transit. If the projected transit improvements by BART and AC Transit could not accommodate the increased demand, the transit agencies would need to upgrade service to the Bayfront. These improvements could create further demand for public transit, with the ultimate effect of decreasing use of the private vehicle.

**Mitigation Included with Project.** Transportation Systems Management programs (TSMs) would be required if developers seek development intensities for office developments and other "non-beneficial" uses exceeding the standard FARs. Minimum development intensities have been specified for the housing areas, in order to ensure proper land utilization and increase the viability of a transit system. The project is consistent with the Metropolitan Transportation Commission (MTC) Regional Transportation Plan in that it would discourage dependency on the private automobile and encourage transit ridership and increased use of bicycles as a transportation mode.

There are two general types of TSMs that could be implemented. A citywide or Bayfront-wide program could be initiated by the City. This would involve internal transit systems, shuttle buses and coordination with businesses in the area. A program which is developed by the occupant or builder of a project, also commonly known as a Transportation Management program, would involve measures such as vanpooling, carpooling, staggered work hours or reduced-cost transit tickets. In either case, the City would have to provide some program oversight to assure the success of the program.

**Mitigation to be Considered.** The City could pursue funding from the MTC and federal and state sources for individual transportation projects which either encourage transit or ridesharing, reduce overall traffic levels, or increase the use and safety of bicycle and pedestrian circulation. Some street intersections could be reconfigured to allow more efficient movement of traffic and improve projected levels of service; however, intersection improvements beyond those proposed in the Plan would be prohibitively expensive.

**Mitigation to be Performed by Others.** The HOV lane and interchange improvements to Powell Street and Ashby Avenue are to be completed by Caltrans. Individual developers could implement additional transportation measures, such as park-and-ride lots, carpooling programs, or bicycle parking.

## **Public Facilities and Services**

**Impact Assessment.** The Specific Plan would increase the amount of open space in the Bayfront area, and would provide a pedestrian-oriented corridor of open space and bicycle/pedestrian circulation connecting the Bayfront to the rest of Emeryville.



The school system in Emeryville could be seriously affected if a large amount of family housing were to be built. This would require, in the worst-case situation, opening another elementary school and hiring the necessary personnel.

Additional new firefighters and police officers would be required to serve the new development. If the City is financially unable to provide for the required number of firefighters and officers, residents of Emeryville would receive reduced fire and police protection.

**Mitigation Included with Project.** The Plan would provide more open space than presently exists in the Bayfront.

**Mitigation to be Considered.** At such time that it becomes necessary, the City could direct a portion of property tax revenues to a fund for school district impactation. This could be anticipated upon approval of major family housing projects. This fund would only apply to school facilities, and could not be used for operating expenses. The City is currently considering assisting a private school to purchase Ralph Hawley School. This would increase the school facilities in the City; however, it would only ease the burden on the Emeryville Unified School District to the degree that students who would normally attend public school in Emeryville attend this private school instead.

The City could utilize the results of an independent study currently underway to determine police department service needs, and it could initiate a study by the ISO (Insurance Services Organization) to assess the City's current fire protection services. This information could be used to assure public safety while the Bayfront and the City develops. Light-locking systems could be installed on major arteries to facilitate emergency response.

The additional police and fire service personnel and equipment could be partially financed by revenues from new development. The City could pursue funding of some parks and open space projects through agencies such as the State Parks and Recreation Department. Recycling of solid waste could be encouraged by proper design of individual projects.

## **Public Utilities**

**Impact Assessment.** The Specific Plan recommends improvements to the water supply system; water supply capacity is not known to be a problem. The project could generate up to 1.9 million gallons per day of wastewater, which is less than 2 percent of the Oakland wastewater treatment plant's capacity. Increased demand for stormwater drainage and other utilities could be accommodated.

**Mitigation Included with Project.** The Specific Plan calls for the establishment of an assessment district for the construction of all utilities improvements, including the stormwater system, as a condition for approval of new development. Wastewater treatment capacity is not known to present a significant problem.

**Mitigation to be Considered.** New development must comply with water conservation guidelines currently being formulated by the East Bay Municipal Utility District (EBMUD). The City could aggressively pursue enactment of water conservation measures.

## Energy

**Impact Assessment.** Energy consumption which results from the Specific Plan would be primarily due to increased vehicle use, and secondarily from energy required for residential and non-residential purposes. It is expected that vehicles will become more fuel-efficient in the future, which will help reduce energy demand. Energy usage for non-vehicular purposes could be greatest under a scenario which maximizes retail and office use. These uses could theoretically consume up to 866,000 kBTU per year.

**Mitigation Included with Project.** The Specific Plan encourages use of public transit by providing for future transit stops and permitting densities sufficient to support a transit system. The Specific Plan also would provide a separate bicycle path along Bay Street, and all pedestrian and automobile circulation routes would be designed to accommodate bicyclists. Bus access from the HOV lane would be provided to the Bayfront. This emphasis on non-motorized modes of travel would be less energy-demanding.

**Mitigation to be Considered.** Individual projects could be designed to incorporate both passive and active energy-conserving techniques. Developers could provide parking for vanpools, bicycles, or park-and-ride access near the HOV lane. The City could adopt an energy conservation ordinance, which could provide incentives for energy-conserving construction, site design and transportation measures, and disincentives for projects which are energy-wasteful.

## Geology

**Impact Assessment.** By inducing greater numbers of people into the area, development of the Bayfront could expose more residents and employees to the geotechnical hazards of ground shaking, liquefaction, and structural settlement. Some residents and employees could be exposed to flood hazards should an earthquake result in failure of the dam at Lake Temescal; and a tsunami also could expose people to flood hazards. Although the likelihood of such events is low, the damage could be significant.

**Mitigation Included with Project.** All structures must be designed in accordance with the Uniform Building Code, which prescribes standards for earthquake-prone areas. Standards presently adopted by the City require comprehensive soil investigations in order for projects to be approved.

**Mitigation to be Considered.** The City should periodically coordinate with the County and State Offices of Emergency Services to assure that the appropriate response would be made by all agencies and City departments during a natural disaster. The City should consider informing landowners and residents of existing risks where they are known, and instituting a program which distributes information to help residents prepare for the possibility of a natural disaster.



## Hazardous Substances

**Impact Assessment.** The Department of Health Services (DOHS) has determined that use of the Marketplace property should be restricted due to soils contamination. Single family dwellings or other residential units which could allow contact with existing soils should not be allowed because of the risk of ingestion of hazardous substances through the soils or through edible plants grown in the soil. Landscaping on a commercial project may require removal of existing soils and replacement with imported soil.

The Garrett Truck Lines property, which is currently being proposed for development, shows evidence of contamination. The EIR for that project indicated that development of the site would not expose the deposits of heavy metals or hydrocarbon materials. It also indicated that the fill material placed on site would seal the waste materials from the surface.

Several industries previously located in the Bayfront may have used hazardous substances in the past. Neither the industries nor the substances they used are well documented. This could pose health risks for future residents and visitors to the Bayfront, particularly in places where contact with soils or vegetation could be expected, such as in public parks and open space. Potential problems with Temescal Creek are discussed in the Water Quality section.

Some existing operations in the Bayfront currently use hazardous materials. Non-impact industrial activities permitted by the Specific Plan could also employ hazardous substances in their operations. Overall, however, the use of hazardous materials in the Bayfront is expected to decrease as a result of the Plan. Although unlikely, an accident on the Southern Pacific Railroad or at the wastewater treatment plant in Oakland could expose employees and resident of the Bayfront to additional hazards. None of these possibilities are expected to generate significant negative impacts, assuming that the fire department continues their annual inspections, and that the City maintains an adequate response plan for potential accidents.

**Mitigation Included with Project.** Environmental performance standards contained within the Specific Plan require compliance with all federal, state and local statutes, codes, rules, ordinances, and regulations.

**Mitigation to be Considered.** Utilizing existing surveys completed by other agencies where feasible, the City should complete a comprehensive survey of all present and historic land uses that may have involved handling or storage of hazardous substances in the Bayfront. The City should consider modifying its existing requirement for soils tests on proposed projects to include a chemical analysis, particularly on sites where previous activities could have employed hazardous materials. Detailed chemical analysis should be required for areas of open space or landscaping, and appropriate measures to assure public safety should be applied at that time according to the results of the analysis. Project-level supplemental EIRs should include a detailed assessment of these conditions.

The Emeryville Fire Department should continue to conduct annual inspections of businesses and should maintain effective emergency response plans. This may require an additional staff member for hazardous materials inspection.

When the Emeryville Marketplace and the Garrett Truck Lines property develop, the City should work closely with the DOHS and require that any unusual soils conditions

or buried containers be immediately reported. Any use which would permit contact with existing soils should be prohibited; or else removal of existing soils and replacement should be required. This requirement could be applied to any property which is later discovered to contain hazardous materials and/or waste.

## Noise

**Impact Assessment.** The project area would be exposed to noise from local traffic, from traffic on Interstate 80, and from rail operations. Adverse impacts are expected in some areas of the Bayfront, where noise levels are expected to exceed state standards for designated land uses. Activities and land uses designated by the Plan are not expected to generate high noise levels, except during construction.

**Mitigation Included with Project.** Environmental performance standards in the Plan would limit allowable noise levels generated from a project site in order to protect adjacent sites. Siting standards described in the Plan recommend that more noise-tolerant land uses be located adjacent to the freeway. These uses would then help shield less noise-tolerant uses.

**Mitigation to be Considered.** The City should consider disallowing residential development in the mixed-use areas immediately adjacent to the freeway, unless a noise study concludes that noise levels from the freeway can be reduced to acceptable levels by site design and noise insulation. Detailed noise assessments should be required of all projects which are located in areas where the noise levels currently exceed state standards. Appropriate design measures could be applied at that time. These could include site design and landscaping to reduce actual and perceived noise before it reaches buildings; architectural design which locates the more noise-sensitive use areas of a building further from the noise source; and acoustical design in structures.

## Air Quality

**Impact Assessment.** Traffic generated by the proposed land uses would have an impact on both local and regional air quality. Concentrations of carbon monoxide levels are expected to be within state and federal standards, except for the intersection of Powell Street with the Interstate 80 interchange, if the Bayfront develops up to the maximum permitted densities.

The additional emissions generated by the project would primarily affect areas east and south of the Bayfront area. Because they would occur over a large geographical region, no measurable change in air quality would be expected from the project. Land uses which are allowed by the Plan are not expected to generate major quantities of air pollutants.

**Mitigation Included with Project.** Uses in the Bayfront would be required to comply with the dust and particulate matter standards that are identified in the Plan. The circulation element of the Specific Plan contains measures which encourage the use of public transit, and bicycle and pedestrian circulation, thereby potentially reducing motor vehicle emissions. The land use element promotes a pattern of mixed uses which would tend to reduce vehicle travel by locating residences near employment and shopping areas. This in turn also would reduce vehicle emissions.



**Mitigation to be Considered.** The City could adopt standards requiring individual projects or buildings to contain bicycle storage facilities and/or locker rooms for bicycle commuters. Intersections could be reconfigured to improve levels of service, although the cost of such a measure could be prohibitive. Transit amenities and incentives, such as the appointment of a TSM coordinator for the City or within a company, could be provided.

## **Water Quality**

**Impact Assessment.** The Specific Plan would reduce the number of industrial point sources of pollution. The Plan recommends alterations to Temescal Creek, which would improve its physical appearance and indirectly encourage some human contact with the water. The quality of the water in this creek is not presently measured. New activities within the Bayfront are not expected to be major waste dischargers. There could be some uses, such as gas stations, which contain on-site underground storage of hazardous materials. These could threaten groundwater quality if storage tanks are not properly designed.

**Mitigation Included with Project.** All discharges of wastewater would be required to comply with any and all local, state, or federal regulations and codes.

**Mitigation to be Considered.** Water from Temescal Creek could be monitored as plans are made to upgrade the creek. If the water is found to be unhealthful for occasional human contact, the City could work with appropriate agencies such as the East Bay Regional Parks District and the Alameda County Flood Control and Water Conservation District to develop measures which would protect public health.

The City could adopt a hazardous materials ordinance which includes provisions for underground storage tanks.

## **Plant and Animal Communities**

**Impact Assessment.** No known important wildlife or plant communities have been identified in the Bayfront; however, there is a remote possibility that a species may be discovered at some point in the future. Some species of waterfowl may begin to inhabit the Bayfront when Temescal Creek is upgraded. It is highly unlikely that these would include any endangered species known to inhabit the Emeryville Crescent, an important salt marsh and wildlife habitat.

**Mitigation to be Considered.** If a rare or endangered species were to be discovered prior to or during construction activities, or if the reconfiguration of Temescal Creek includes any possibility of tidal action, a wildlife biologist should be retained to assess the potential impact, and the U.S. Fish & Wildlife Service should be notified.

## **Cultural Resources**

**Impact Assessment.** The project may disturb archaeological remnants, particularly Indian shellmounds, known to exist in the vicinity. Although it is likely that these sites already have been destroyed, no studies have been conducted to confirm this. The extent of the potential impact cannot be accurately assessed without additional information.

**Mitigation to be Considered.** The City should retain a qualified archaeologist to perform a more detailed and geographically specific records search of the Emeryville Bayfront, and physical investigation, such as augering with examination by an archaeologist, should be required of sites that could potentially contain archaeologically significant remains. Future discoveries of unusual buried items should be reported to a qualified archaeologist.

## C. SIGNIFICANT LONG-TERM IMPACTS

### **Significant Irreversible Environmental Changes**

Development would alter the Emeryville Bayfront from primarily low-intensity industrial uses to highly urban office, commercial, and residential uses. Mitigation measures proposed in this report would reduce the significance of most of these impacts. Several impacts, however, cannot be mitigated if the project were implemented as proposed.

**Change in Community Character.** Changes to the community resulting from more intense and more urban development in the Emeryville Bayfront would be felt throughout the City of Emeryville and, to some degree, in neighboring communities. Changes could include increased traffic, induced growth, and increased access to the Bayfront and bay shoreline. Such changes from the existing industrial character are expected regardless of the Plan's adoption; nevertheless, the Plan would hasten the change.

An analysis of the potential changes in the neighborhood demographics and character are beyond the scope of this EIR. The complexity of the issues and the numerous variables that must be addressed--such as the actual type and mix of housing, housing cost and affordability, economic and social changes in the City as a whole and in the region, for example--suggest that considerable speculation would be involved in the projection of future neighborhood character.

**Commitment of Resources.** Development of the project site would involve irreversible environmental changes by committing material and energy resources directly and indirectly.

**Infrastructure Improvements.** In order for development to occur at the standard or bonus FAR, extension and upgrading of several utility lines, and improvements to the circulation system would be needed. These improvements would increase the likelihood that parcels developed at lower intensities (base FAR) would eventually redevelop or add space at the greater intensities. This could have cumulative and growth-inducing effects on land in the vicinity.

**Public Services and Facilities.** Increased development would require additional personnel and equipment in the police and fire departments, and could potentially affect the school district, if a significant amount of family housing is constructed.

**Short-Term Growth Versus Long-Term Productivity.** Enhancement of long-term productivity would not be affected by the implementation of the project, other than through the commitment of non-renewable resources. Archaeological resources



could be destroyed if care is not taken to assure the preservation of any remnants of early Indian activity which exist.

The project could result in positive long-term impacts as industrial uses which are point sources of pollution leave. Furthermore, virtually no development controls currently exist in the area, and development already is beginning to occur. Without guidelines, this uncontrolled development could cause resource losses and environmental degradation similar to or worse than that which could result from the Plan.

### **Growth-Inducing Impacts**

Development of the project area could induce growth in the project vicinity. Development up to the maximum permitted intensities would create an identifiable urban center, increasing pressures on developable land which surrounds the site. Most of the land in the surrounding area is occupied with industrial uses. The ultimate result of the Specific Plan growth could be to induce a significant change in the types of uses in these areas as well, indirectly causing further displacement of manufacturing jobs. The effect of these impacts cannot be measured precisely.

### **Cumulative Impacts**

Cumulative impacts are impacts which result from the project, considered in conjunction with the impacts of growth already occurring in the vicinity and from additional growth which might be induced by the project. These impacts could include increases in traffic, air pollutants, and noise; increased burdens on public facilities, and additional commitment of nonrenewable resource.

Most impacts would be related to increases in traffic. The growth expected within the City of Emeryville has been accounted for in this report. The Bayfront Specific Plan should be implemented to assure the efficient use of strategically located urban land and discourage the suburban sprawl which could otherwise take place.

## **D. ALTERNATIVES**

### **No Project Alternative**

The "No Project" alternative implies that the Specific Plan would not be adopted and that growth in the Bayfront would be controlled by the existing zoning ordinance and the Redevelopment Plan. There are currently no restrictions or regulations guiding development, and this alternative could have unpredictable environmental results, considering the susceptibility of the Bayfront to growth. This alternative could result in large-scale, unplanned, uncoordinated projects, unsupported by infrastructure improvements or public facilities. Because this alternative does not deal with the Bayfront comprehensively and would leave development decisions entirely to property owners and developers, it is expected that this alternative could result in worse traffic conditions (because of the lack of a planned circulation system), greater air pollutant emissions (because of increased traffic congestion), greater consumption of energy (because of no concerted effort being made to encourage non-motorized modes of travel), and more significant adverse visual impacts (because of the absence of guidelines on building height, form, and location).

## Restricted Growth

This alternative would permit uses similar to those allowed by the Specific Plan but at a lower intensity. If development were to occur under this alternative, the types of impacts would be similar to those of the Specific Plan but they likely would not be of the same magnitude.

Like the Specific Plan, the actual uses that develop depend on how developers choose to apply the Plan's flexible guidelines. The impacts that could result from the Restricted Growth alternative therefore also depend on the type of development that ultimately takes place. If primarily non-residential, this alternative would be less demanding on public services than the preferred alternative. If the development that results from this alternative were primarily residential, then the demands for public services may not be significantly reduced over those in the preferred alternative. It is expected that traffic volumes would be lower since there would be less office development, which is the most intensive traffic generator. This reduction in trips would result in decreases in air pollutant emissions, noise, and energy consumption. In these terms, the Restricted Growth alternative could be considered an environmentally superior alternative. However, as development density decreases, so does the opportunity to establish a viable public transit system. If this occurs, employees would be forced to return to their private vehicles, and air pollutant emissions, noise, and energy consumption would rise again. Thus, a reduction in development intensity does not necessarily correspond to a proportionate reduction in impacts.

An important non-environmental question is whether the necessary infrastructure improvements could be supported financially by the decreased development. Although not an EIR issue, it is noted that infrastructure improvements needed by the Restricted Growth alternative are comparable to those required by the preferred alternative. The revenues generated by the Restricted Growth alternative would be less and would not be able to cover the costs of the improvements as well.

The City has indicated further non-environmental reasons for preferring a high-density alternative. They are primarily related to the greater amount of funds generated by the higher-density alternative and the flexibility to use those funds for improvements in other parts of the City. This would include redevelopment funds required by law to be used to build low- and moderate-income housing.





## I. INTRODUCTION

### A. AUTHORIZATION AND PURPOSE

This draft Environmental Impact Report (EIR) has been prepared in compliance with the California Environmental Quality Act of 1970 (CEQA), as amended, to inform public decision makers and the public generally of the environmental effects of a specific plan for the Emeryville Bayfront area. This document contains an objective evaluation of potentially positive and adverse impacts, and identifies effective and feasible mitigation measures which may be employed to avoid or reduce potentially negative impacts. Alternatives to the proposal are also analyzed.

The report has been prepared using documents previously issued in connection with the Bayfront Specific Plan, and in consultation with appropriate agencies which are concerned with the Plan. These agencies and pertinent data sources are listed in the bibliography.

Specific plans are authorized by state law (Government Code Section 65450 et seq.) as a method of implementing a jurisdiction's general plan. A specific plan is a regulatory document which must include "all detailed regulations, conditions, programs and proposed legislation . . . necessary for the systematic implementation of each element of the general plan" (Government Code Section 65451). The Bayfront Specific Plan was prepared in consultation with the team preparing the City's general plan; once the general plan is completed, the Specific Plan must be consistent with it.

Adoption or amendment of a specific plan constitutes a "project" under CEQA, thus requiring an evaluation of the potential impacts. The Bayfront Specific Plan is not an individual development proposal; this EIR examines the comprehensive effects of development which is permitted by the Plan. Supplemental EIRs will be required on all non-residential development projects proposed pursuant to the Specific Plan. The supplemental EIRs may be tiered, to focus the EIR on specific issues of the individual project. Tiering is allowed when the project is consistent with the Specific Plan; an Initial Study must be prepared to determine whether and to what extent this EIR is still sufficient for the proposed project. The discussion in the tiered EIR would be limited to effects which 1) were not examined as significant effects in this EIR; or 2) could be reduced or avoided by revisions or conditions which are subsequently imposed (CEQA Guidelines Section 15152).

EIRs will not be required for residential projects which are consistent with the Specific Plan, unless substantial changes are proposed for the Specific Plan or new information on the environmental effects of proposals becomes available (CEQA Guidelines Section 15182).



## B. PROJECT DESCRIPTION

### Location

The project would be located in Alameda County within the City of Emeryville, as shown in Figure I-1. It is in Emeryville's Bayfront area, which is east of Interstate 80 (I-80) and west of the Southern Pacific railroad tracks, as shown in Figure I-2. The Powell Street exit of I-80 provides regional access; the Ashby Street exit provides access only from northbound (eastbound) vehicles on the freeway. The Bayfront can be accessed indirectly from I-580. The only local streets which connect the Bayfront with other parts of Emeryville are Powell, 65th, and 64th Streets. The latter two streets cross the railroad tracks at the northern end of the City.

### Plan Goals and Objectives

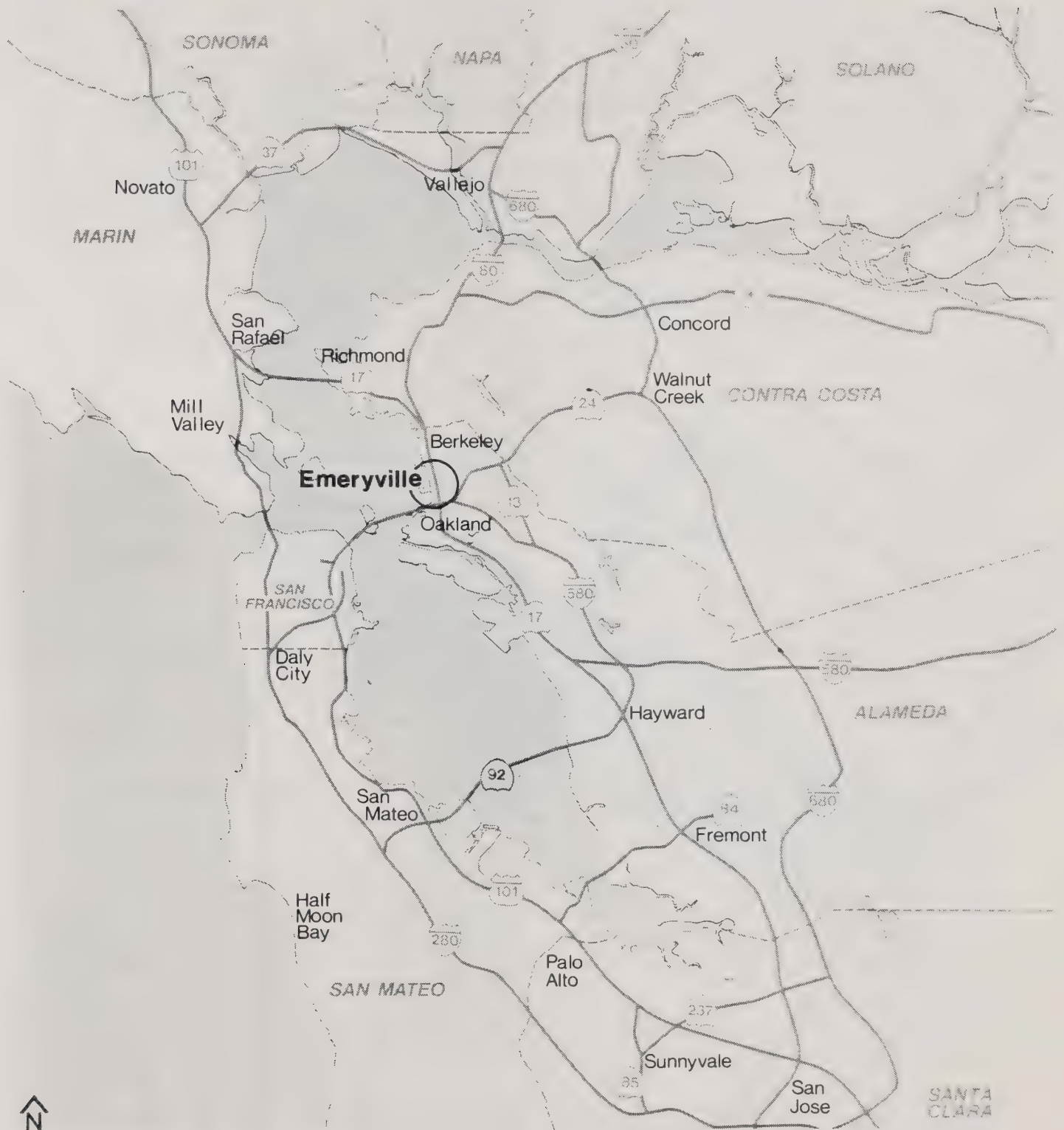
The proposed Specific Plan would guide development of the Bayfront area. It is a regulatory document which includes provisions for land use, circulation, open space, utilities and community design. Location, intensity, and phasing of land uses is based upon goals and objectives formulated in the initial stages of the planning program. These goals respond to the desires, constraints and opportunities identified by the community.

The goals listed below have been formulated on a citywide basis. The Specific Plan would implement these goals in the Bayfront area.

- Goal 1: Establish and maintain efficient and harmonious use of land within the community, accommodating both residential and business interests, and minimizing potential threats to public health, safety, and comfort.
- Goal 2: Develop and maintain an efficient circulation system to accommodate the movement of persons and goods to, through, and from Emeryville, including rail, vehicular, and pedestrian movement.
- Goal 3: Improve the cohesiveness and image of the City through the careful design and coordination of new development with existing development and through the rehabilitation and redevelopment of older areas.
- Goal 4: Achieve utilization of the land supply that maintains a solid tax base while respecting the area's natural, scenic, and historic resources.
- Goal 5: Develop and maintain a high standard of design and use for services and facilities that meet the community's needs for education, cultural entertainment, and protection of public health and safety.

Objectives formulated in the Specific Plan elaborate on the above goals. The following briefly summarizes those objectives, which can be found in Section 2.20 of the Specific Plan.

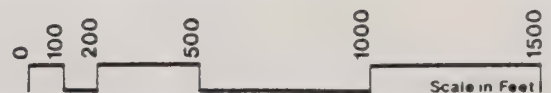
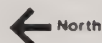
**Land Use.** The Specific Plan would promote uses which are compatible with one another and which encourage greater interaction with the rest of the City. A key element of this would be a mixed-use Town Center. New development would be primarily mid-rise in scale, in order to relate well to the rest of the City. Public open

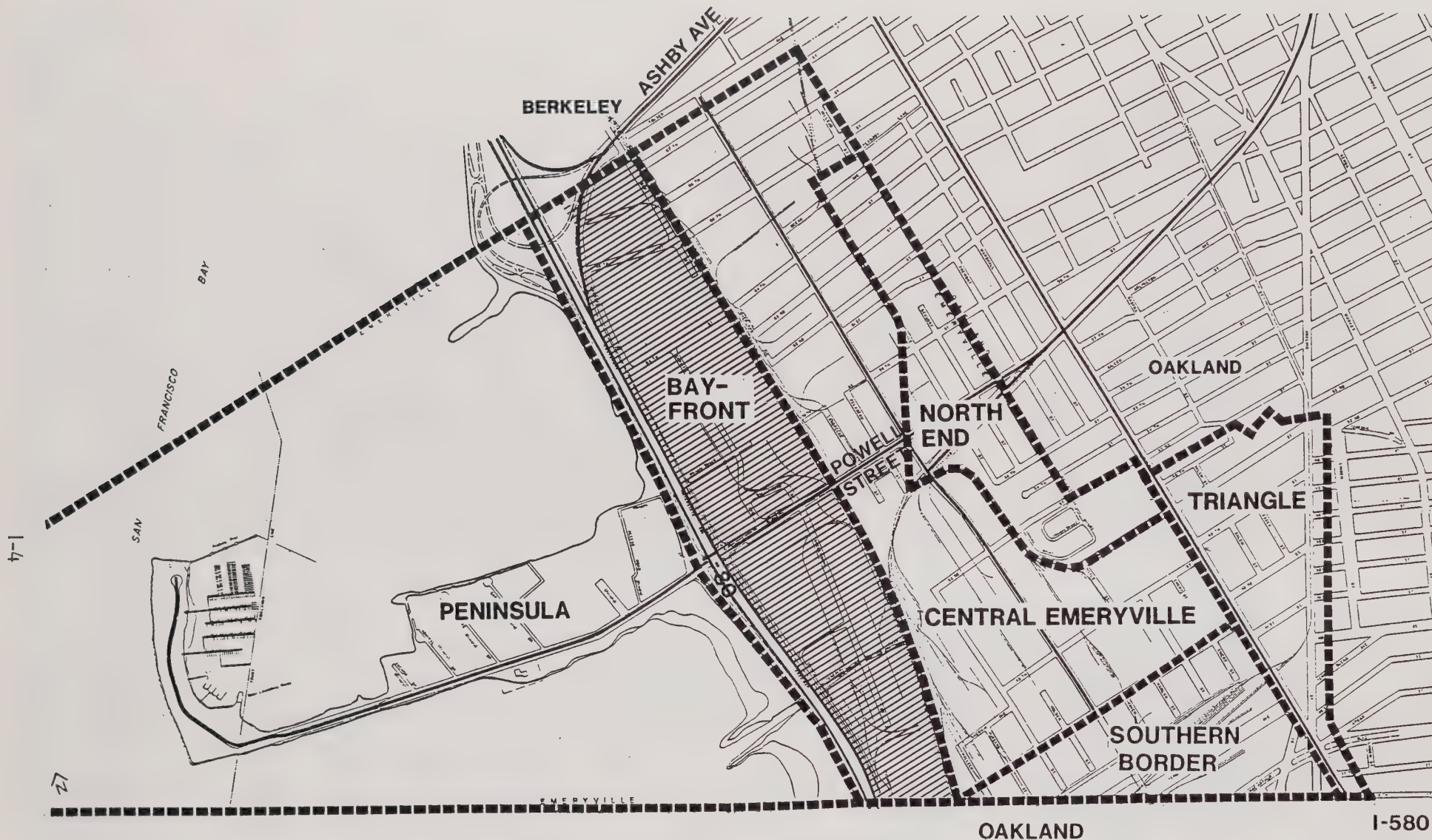


**Figure I-1  
REGIONAL LOCATION**

## EMERYVILLE SPECIFIC PLAN

SEDWAY COOKE ASSOCIATES  
Urban and Environmental Planners and Designers





----- SUBAREA BOUNDARY

NOTE: EAST EMERYVILLE SUBAREA IS COMPRISED OF THE NORTH END, CENTRAL EMERYVILLE, TRIANGLE, AND SOUTHERN BORDER SUBAREAS.

Figure I-2  
CITY SETTING

## EMERYVILLE SPECIFIC PLAN

SEDWAY COOKE ASSOCIATES  
Urban and Environmental Planners and Designers

SCALE in feet 0 200 400 600 800 1000 2000



space would be provided. Existing uses and structures which are compatible with proposed uses and in good condition, or which possess historic or architectural value, would be retained.

**Circulation.** The Specific Plan recommends improvements to the street system, to local freeway access, and to local transit. It proposes a bicycle/pedestrian circulation system which would reduce the City's current dependency on the automobile and would link all areas of the City.

**Utilities.** The Specific Plan recommends improvements to existing utility systems, phased in accordance with the expected development. Financing for the improvements would occur through a property tax assessment district.

## **Plan Concept**

The proposed land uses are illustrated in Figure I-3 and summarized in Table I-1. The Specific Plan contains four elements: land use, circulation, utilities, and community design. These elements and the Plan's Development Standards, which are summarized in a later section of this Chapter, would guide future development of the Bayfront.

Permitted uses for each parcel of land, as delineated in Figure I-4, are identified in the Land Use Matrix, Table I-2. These uses would be allowed on the portion of a parcel where they would be consistent with the land use designations shown in Figure I-3. Provisions governing these designations are described in the summary of the land use element later in this chapter. The Space and Site Requirements Matrix, Table I-3, notes specific land dedication requirements and permitted development intensities.

**Development Intensity.** Three Floor Area Ratios (FARs, or the ratio of built floor area to land area) are described. The base FAR represents the level of development permissible without major improvements to areawide streets and utilities. The standard FAR represents the level of development permissible when areawide road and utility improvements are in place or scheduled for construction in time to serve the new development. The bonus FAR is the maximum allowable development intensity. This level of development would be allowed only when areawide road and utility improvements are in place and when special conditions are met, as described below.

Transportation System Management (TSM) Programs. A bonus FAR would be available for a TSM which is approved by the City and which would reduce traffic volumes to the level that would have been generated if the site were developed at the standard FAR.

Beneficial Uses. The bonus FAR would be available for providing uses which are considered beneficial. These include housing, hotel, retail, cultural and entertainment uses. The developed floor areas of these uses would not be fully counted when determining allowable development intensity on a site; they would be multiplied by a factor, as shown in Table I-4, to arrive at a figure which is somewhat less than the actual development.

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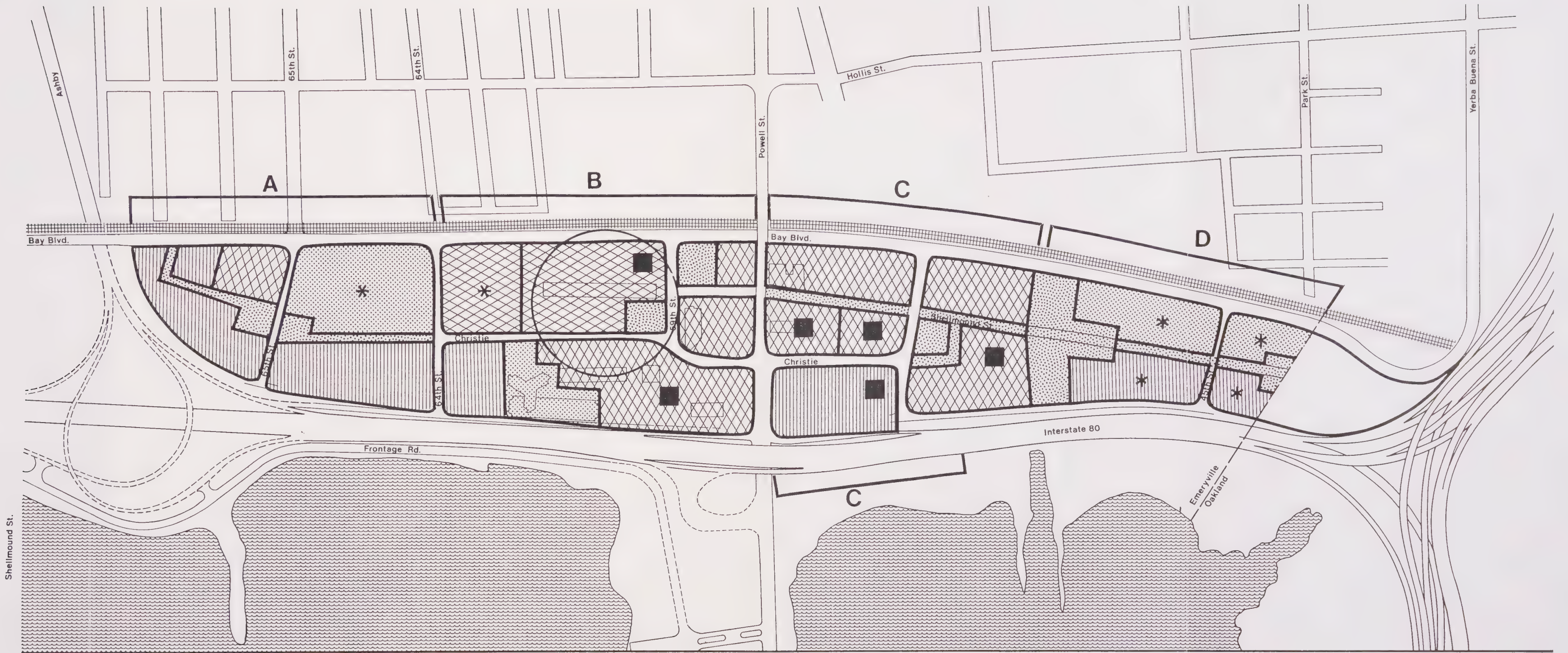
Table I-1: Proposed Land Uses

| <u>Land Use</u>                  | <u>Acres</u> |
|----------------------------------|--------------|
| Office/Commercial                | 38.9         |
| Mixed Use                        | 64.9         |
| Housing                          | 21.4         |
| <u>Regional Retail*</u>          | <u>38.9*</u> |
| Subtotal                         | 125.2        |
| <u>Remaining in Existing Use</u> | <u>8.8</u>   |
| TOTAL                            | 134.0        |

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\*If regional retail option is exercised, up to 38.9 acres would be removed from housing, mixed use and office areas. The actual amount of land devoted to regional retail would depend on market conditions





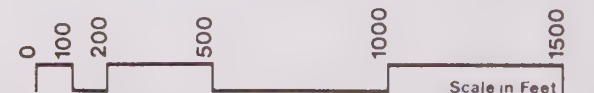
- |                                                                                     |                   |                                                                                     |                             |
|-------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|-----------------------------|
|  | OFFICE/COMMERCIAL |  | REGIONAL RETAIL ALTERNATIVE |
|  | MIXED USE         |  | HOTEL                       |
|  | HOUSING           |  | PUBLIC OPEN SPACE           |
|  | TOWN CENTER       |                                                                                     |                             |

Figure I-3  
LAND USE ELEMENT

# EMERYVILLE SPECIFIC PLAN

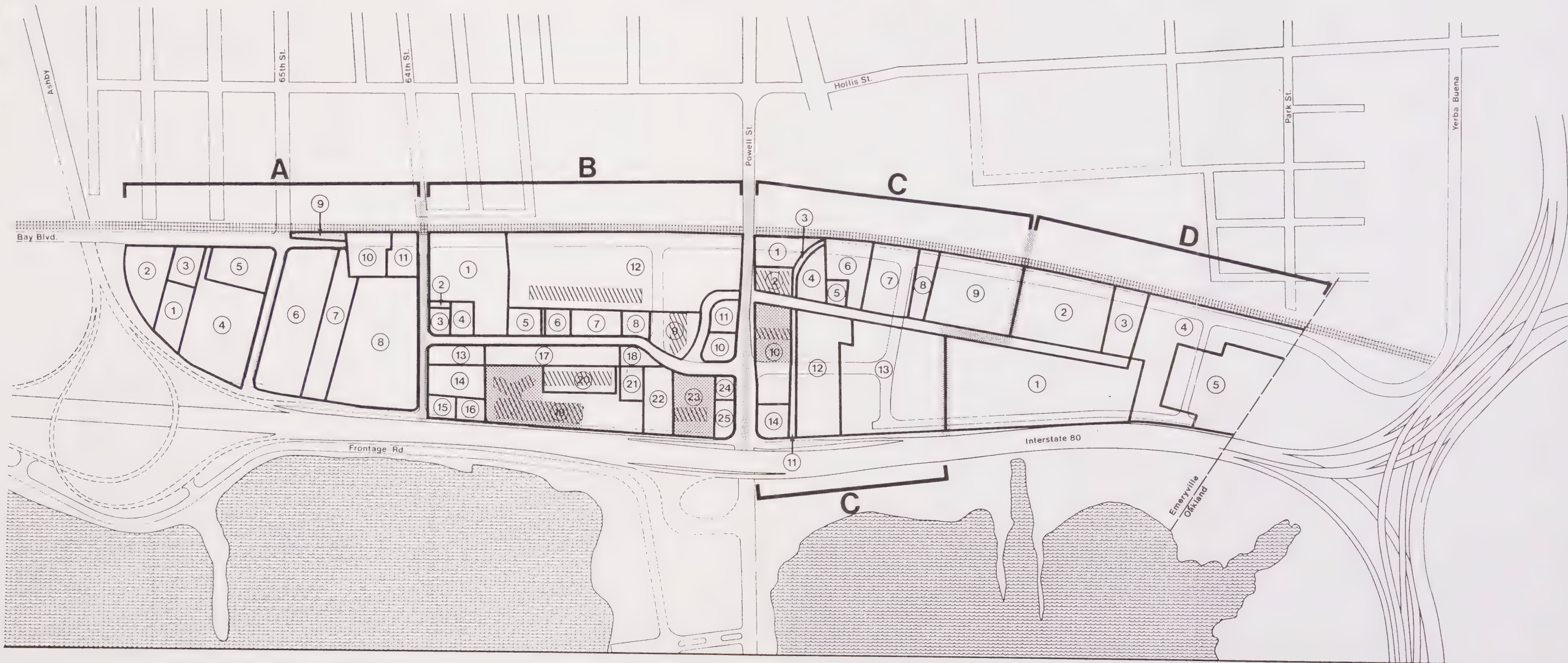
SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers









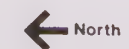
- ⑤ OWNERSHIP PARCEL
- B** DEVELOPMENT AREA
-  SITE REMAINING IN EXISTING USE
-  BUILDINGS TO BE RETAINED

**Figure I-4  
DEVELOPMENT AREAS  
AND PARCEL REFERENCE**

# EMERYVILLE SPECIFIC PLAN

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**Table I-4: FAR Factors**

| <u>Use</u>                           | <u>FAR Factor</u> |
|--------------------------------------|-------------------|
| Retail/Restaurants/Personal Services | 0.3               |
| Housing                              | 0.2               |
| Hotel                                | 0.3               |
| Cultural/Entertainment               | 0.3               |

---

The maximum allowable development on a site which provides these beneficial uses is limited by both the standard FAR and the bonus FAR. The calculated FAR (using the FAR factors to count the floor areas of beneficial uses) cannot exceed the standard FAR; but actual development (the actual FAR) cannot exceed the bonus FAR. Table I-5 provides an example of how this works.

Transfer of Development Rights (TDRs). Private property which is dedicated to the City for open space or roadways is considered to have "development rights," and the amount of development which could have occurred by right on the dedicated property may be "transferred" to the remainder of that site or to other sites in the Bayfront. Separate parcels which are under single ownership may also exercise the option to transfer development rights. The maximum actual development would be limited by the bonus FAR. The "transferred" development must meet all conditions (use, height, etc.) of the site to which it has been transferred.

## **Plan Elements**

**Land Use Element.** The Specific Plan would allow commercial offices, retail, hotel, entertainment and personal and business services in the Bayfront area. A mixed-use Town Center would be centrally located, and housing would be situated along the eastern edge of the Plan area. Office uses are proposed adjacent to I-80. Regional retail uses may be permitted as an alternative in the northernmost and southernmost sections of the Plan area.

Specific provisions of the Plan which describe allowable development in designated land use areas, as shown in Figure I-3, are summarized below.

Office/Commercial. Areas designated for office/commercial uses could develop up to the limits of the bonus FAR, if conditions for utilizing the bonus FAR are met. Complementary retail, business services and personal services would be permitted at street level in these areas, provided that such uses do not exceed 20 percent of the gross square feet of the parcel's enclosed space.



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**Table I-5: Example Using Base, Standard, and Bonus FARs**

|                                  | <u>Base</u> | <u>Standard</u> | <u>Bonus</u> |
|----------------------------------|-------------|-----------------|--------------|
| FAR:                             | 0.7         | 1.0             | 1.2          |
| Parcel Size: 100,000 square feet |             |                 |              |
| Developable area (sq. ft.)       | 70,000      | 100,000         | 120,000      |

**Land Use Designation:** Mixed Use with Regional Retail Alternative.

**Discussion:** If the road and utilities improvements are not in place, the developer would be limited to the base FAR, which would allow only 70,000 square feet of building space. If all necessary road and utilities improvements are in place, the developer would be allowed to build to the standard FAR, for a total of 100,000 square feet.

Assume that the developer proposes a program which includes 50,000 square feet of office, 40,000 square feet of housing, and 80,000 square feet of retail. These are permitted uses on this parcel. It appears that this would exceed the permissible 100,000 square feet allowed by the standard FAR; however, the development that is being proposed contains some uses for which development bonuses may be awarded. The amount of development is counted as follows:

| <u>Actual<br/>Development<br/>(square feet)</u> | <u>Use</u>   | <u>FAR<br/>Factor</u> | <u>Calculated<br/>Development<br/>(square feet)</u> |
|-------------------------------------------------|--------------|-----------------------|-----------------------------------------------------|
| 50,000                                          | Offices      | --                    | 50,000                                              |
| 40,000                                          | Housing      | .2                    | 8,000                                               |
| 30,000                                          | Retail       | .3                    | 9,000                                               |
| <u>120,000</u>                                  | <u>TOTAL</u> |                       | <u>67,000</u>                                       |

Maximum development is limited by both the standard and the bonus FARs. Actual development may not exceed what is permitted by the bonus FAR: in this case, actual development may not exceed the 120,000 square feet proposed. Calculated development may not exceed what is permitted by the standard FAR: the proposed development, calculated using the FAR factors, is also within these limits.

It should be noted that the bonus FAR could be employed in several ways. For example, the developer could decide to build 120,000 square feet of retail, or 100,000 square feet of residences and 20,000 square feet of retail.

Office uses could exceed the amount of development allowed by the standard FAR only upon enactment of a TSM program or a transfer of development rights. Development rights may be transferred from the portion of a parcel which was dedicated to the City for open space or roadways, or from another parcel under the same ownership. In all cases, the absolute upper limit on development would be controlled by the bonus FAR.

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Mixed Use. The Plan encourages but does not specifically require a mix of uses in these locations. Development could occur which is almost entirely single-use. Ground-level building space would be limited to retail, eating and drinking, personal service, and entertainment uses, to achieve a pedestrian-oriented atmosphere. These uses could also be incorporated into upper-level floor space where pedestrian overpasses cross the freeway and railroad tracks. Hotels would be permitted in some mixed-use areas.

For parcels which are over 200,000 square feet in area, office uses would be limited to 70 percent of the allowable building space, calculated at the bonus FAR. In addition, these parcels must have at least 20 percent of the allowable building space (calculated at the standard FAR) devoted to housing.

Town Center. The Town Center, which is designated in a mixed-use area, should become the major focus for the commercial, social, and cultural activities of the City. Entertainment and cultural uses which stimulate evening and weekend activity would be encouraged in this area. It could also be a relocation site for City administrative facilities.

Housing. Areas designated for housing would be located in the eastern portion of the Bayfront, in order to be separated as far as possible from freeway noise. Housing must be built at densities between 0.7 and 1.5 FAR. Complementary retail and personal services are permitted, provided they do not occupy more than 20 percent of the gross square feet of the project. A portion of the housing units would be designed and made available for families with three or more members; 20 percent must be affordable to households with incomes within 120 percent of the median Alameda County income. All areas designated for housing could exercise the regional retail option, described below.

Regional Retail. Regional-serving retail uses are permitted by the Plan as an alternative to all areas which are designated for housing and some which are designated for office and mixed uses, provided that they do not compete with the retail uses in the Town Center. South of Powell Street, these uses would be permitted only when a grade-separated arterial connection from the Bayfront to San Pablo Avenue (via Yerba Buena Avenue, through Oakland) is provided.

Open Space. The Plan recommends an open space corridor which would extend from Berkeley's Aquatic Park south to the Yerba Buena overpass. The open space corridor would serve as the main pedestrian circulation system. A public plaza which can accommodate outdoor entertainment and cultural activities would be located along the corridor at the Town Center; major parks would be situated at the intersections of the pedestrian open space and circulation corridors; and Temescal Creek would be upgraded and maintained as an open waterway. The Plan contains requirements for dedications of land or in-lieu fees for public open space use as development occurs.

**Circulation Element.** The Plan recommends that citywide east-west connections be strengthened. A new connection between the Bayfront area and East Emeryville would be established to relieve some of the burden on Powell Street. A vehicle overpass has been recommended at Yerba Buena Avenue, and would be required if regional-serving retail uses are to be developed in the southern Bayfront.

Connections with Berkeley and Oakland would be enhanced at Ashby Street and Yerba Buena Avenue, respectively. The extension of Bay Street for the full length of the Bayfront area would improve north-south circulation within the Plan area.

Parking Standards. The Specific Plan contains minimum and maximum parking requirements, and provisions for shared parking spaces and compact spaces. A maximum number of parking spaces has been established in order to encourage use of public transit (See Section 4.20 (c) in the Plan).

Pedestrian and Bicycle Routes. The proposed circulation concept includes provisions for bicycle and pedestrian circulation through the Plan area, as well as for connections to the Peninsula, East Emeryville, Berkeley and Oakland. Included in the recommended improvements are bridges for bicycle and pedestrian use, to be constructed over the existing railroad tracks and I-80.

**Utilities Element.** Development of the Bayfront as permitted in the Specific Plan would require both upgrading and extension of existing sewer, water, and storm drainage facilities. This would be accomplished in phases, as development occurs, and would be financed through an assessment district. Development at higher intensities would not be allowed until improvements are in place, or unless a development agreement has been signed, assuring that needed improvements would be provided by the time completed development is ready for occupancy.

**Community Design Element.** The Community Design Element assures consistency between the Land Use, Circulation, and Utility Elements. Development decisions would be made with each of these elements in mind, to ensure development of a cohesive, well-designed urban environment in the Bayfront.

Proposed development standards address view, wind, and shading protection; building setbacks, facade materials and heights; organization of developments; circulation and parking; pedestrian movement and open space.

The Plan would protect views from eastern sections of the City and the East Bay hills. Accordingly, the lowest structures would be located along I-80, and taller structures would be allowed along the eastern edge of the Plan area and near the proposed Town Center, to form a focusing point for the Town Center. In this area views toward the bay are already blocked by existing highrise structures in the Bayfront and the Peninsula. Allowable heights by parcel are listed in Table I-3.

## C. ORGANIZATION OF THE EIR

This report is divided into several chapters. Chapter I provided a summary of the proposed project. Chapter II, Environmental Setting, describes the conditions which currently exist on the project site and the immediately surrounding area. The third chapter discusses the environmental impacts which would result from implementation of the project, and recommends mitigation measures where appropriate. Significant long-term impacts, growth-inducing impacts and cumulative impacts are described in Chapter IV, while alternatives to the proposed projects are discussed in Chapter V. Seven appendices are included: Appendix A describes the methodology of the traffic analysis, and Appendix B discusses the air quality analysis. Appendix C concerns the noise environment. Appendix D describes TSM programs. Appendix E describes some energy conservation techniques. Appendix F describes possible noise reduction measures. Appendix G contains information on CEQA requirements for archaeological resources.



## II. ENVIRONMENTAL SETTING

### A. POPULATION AND HOUSING

All of the population in the Specific Plan area resides in the Pacific Park Plaza development. Pacific Park Plaza is a relatively recent development; it was completed just prior to the 1980 census. Occupancy in the building is not yet complete; of 583 units, approximately 250 are currently occupied.

A representative of Pacific Union, the project's developer, expects the building to be fully occupied by mid-1986. At that time, there should be 700-800 people living in the building. Presently, an estimated 350 people occupy the 250 units, based on a presumed household size of 1.4 persons per unit.<sup>1</sup>

Pacific Park Plaza marketing personnel do not have current records on demographic characteristics of the building occupants. A representative of the company estimates, however, that approximately 7 percent of the buyers are retired; it is probable that most of these people are elderly (over 65 years old). The units are small and do not attract families. Although no statistics are available, very few children are known to live in the building. Most of the buyers (43 percent) are single; one-third are couples between the ages of 40 and 55 years. Household income levels range from approximately \$40,000 to \$200,000 annually. Of the units which have been occupied, approximately 100 are rented units.<sup>2</sup>

These are significant demographic differences between East and West Emeryville. East Emeryville, which is all of the City east of the main railroad tracks, contains all of the City's older housing stock. West Emeryville, composed of the Bayfront and the Peninsula, consists exclusively of multifamily dwellings built after 1970.

The City's age groups are somewhat segregated among the three census block groups which comprise the City. According to the 1980 census, Block Groups 1 and 2, which include everything east of Hollis Street, contain over 99 percent of the City's population 18 years or younger. Block Group 3, which is primarily the Bayfront and the Peninsula, is composed almost entirely of adults aged 18 to 64 years. Pacific Park Plaza and Watergate, which contain the only residential populations in Block Group 3, closely resemble each other in demographic characteristics.

The population of Block Group 3 also varies from that of the rest of the City by household type, annual income and ethnicity. While over 90 percent of Block Group 1 and nearly 70 percent of Block Group 2 live in family households, only one-third of the households in Block Group 3 are comprised of families. In Block Group 3, 85 percent of the population is white; in the rest of the City, only 40 percent of the population is white.

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<sup>1</sup>Peter Palmisano, Pacific Union, June 18, 1985.

<sup>2</sup>Chuck Stagliano, Marketing Manager, Pacific Park Plaza, June 26, 1985.

Bayfront and Peninsula residents are, on the whole, wealthier than those in the rest of the City. Median household income in 1980 was \$22,023, well above that of Block Groups 1 (\$16,000) and 2 (\$10,359). Housing costs generally corresponded to income levels.

Housing types in West Emeryville contrast sharply with those of East Emeryville: east of the Bayfront, most homes are single family dwellings, duplexes and triplexes, with few structures of five or more units. All of the housing units in the Bayfront and Peninsula are in higher density multifamily buildings.

## **B. EMPLOYMENT**

The City's historic employment base, industry, is changing. Newer development in the Peninsula has created many new jobs in the finance, insurance and real estate, retail and service sectors. The Bayfront, which possesses great potential for change because of its strategic location, is beginning to follow this pattern. Traditional industrial uses are slowly being replaced by office, retail, and hotel uses, as the land values have increased to the point where large-scale, land-intensive businesses are no longer economically viable.

A 1984 survey of employment indicates that two-thirds of the Bayfront's 1,950 employees presently work in large-scale manufacturing, wholesale, or trucking activities, such as Judson Steel, Pfizer Company, and Garrett Freightlines. The employment in each industry is shown in Table II-1.

## **C. LAND USE**

The industries that have historically accounted for the majority of the City's jobs are relocating, and the new industries that have begun to locate in the City are smaller-scale in operation and more labor-intensive. Emeryville in general, and the Bayfront in particular, possess substantial development potential and locational advantage relative to other East Bay communities. A dramatic transformation in the City's economic base is currently taking place.

The land use patterns in the Bayfront, like the land use Citywide, are reflections of both historical and current relationships among the City's economic, social, and cultural elements. The City is separated into three distinct areas by the railroad tracks and Interstate 80. The Bayfront is one of these areas, sandwiched between the Peninsula and East Emeryville.

### **Historical Development**

At the time of the first European settlement in the early 19th Century, Emeryville was part of a large land grant and was used primarily for raising cattle. At that time, the Bayfront existed as marshland; the margin of the San Francisco Bay ran approximately along what is now the Southern Pacific Railroad line.

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Table II-1: Employment by Industry, 1984

| <u>Industry</u>                       | <u>Bayfront</u> |            | <u>City Total</u> |            |
|---------------------------------------|-----------------|------------|-------------------|------------|
|                                       | <u>#</u>        | <u>%</u>   | <u>#</u>          | <u>%</u>   |
| Construction                          | 65              | 3.3        | 365               | 2.8        |
| Manufacturing                         | 780             | 40.0       | 5,744             | 44.4       |
| Wholesale                             | 209             | 10.7       | 1,436             | 11.1       |
| Trucking/Warehouse                    | 274             | 14.1       | 467               | 3.6        |
| Finance, Insurance and<br>Real Estate | 125             | 6.4        | 558               | 4.3        |
| Retail                                | 117             | 6.0        | 985               | 7.6        |
| Service                               | 170             | 8.7        | 1,754             | 13.6       |
| Mixed Uses                            | 204             | 10.5       | 1,185             | 9.2        |
| Public                                | 0               | —          | 175               | 1.4        |
| Unknown                               | <u>6</u>        | <u>0.3</u> | <u>258</u>        | <u>2.0</u> |
| TOTAL                                 | 1,950           | 100.0%     | 12,927            | 100.0%     |

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Source: Contacts Influential, October 1984; SCA.



The City's first commercial development occurred later in the 19th Century when Joseph Emery subdivided the land grant. Several years later, the railroad was constructed along the shoreline of the Bay, and the bucolic land uses gave way to industrial activities which were dependent on the railroad lines for transportation of raw materials and finished goods.

### **Current Patterns**

The Bayfront is composed entirely of landfill which was placed between the 1930s and late 1960s. The Bayfront land uses have been strongly influenced by the area's proximity to the Bay and the freeway. Trucking companies and heavy industrial uses such as Judson Steel moved in to take advantage of the relatively convenient regional access.

Current land uses in the Bayfront are depicted in Figure II-1. Industrial uses are still predominant; however, in the last decade, the Bayfront has undergone some redevelopment as land prices have risen and older industrial uses have begun to move out of the area. Several relatively new midrise and highrise office buildings and commercial businesses are now clustered around the Interstate 80/Powell Street interchange. A few business services activities that might serve the commercial office buildings are in operation.

More intensive office activities in the Bayfront are still primarily surrounded by one- and two-story buildings accommodating trucking and wholesaling operations. Very few conflicts with adjacent land uses have been identified in the Bayfront, with the exception of Pfizer Chemical, which is a source of noise for East Emeryville residents, and the Silks nightclub, which affects residents of Pacific Park Plaza.

### **D. URBAN DESIGN**

The project area is highly visible from major circulation routes, employment centers and residential areas; thus, its appearance is important from a regional perspective. Historically, the Bayfront's development pattern blended with the lowrise industrial and housing areas that spread throughout the lowlands of the East Bay.

Now, however, the redevelopment which is taking place in Emeryville and other portions of the northern East Bay is creating a significant contrast to this lowrise character. In the Bayfront, the 30-story Pacific Park Plaza residential tower is a major visual landmark because of its size. Emeryville's physical surroundings in the northern East Bay are depicted in Figure II-2.

The Bayfront serves as a key area of entry into Emeryville from regional traffic routes. Current access points do not serve this purpose adequately. Powell Street, the primary entrance, does not have adequate capacity for the amount of traffic that it serves. Limited access is provided by the Ashby Avenue interchange.

Within the Bayfront, most roads are discontinuous. Potential vistas are blocked by buildings where the road ends. Roadways are lined with rows of parked cars.



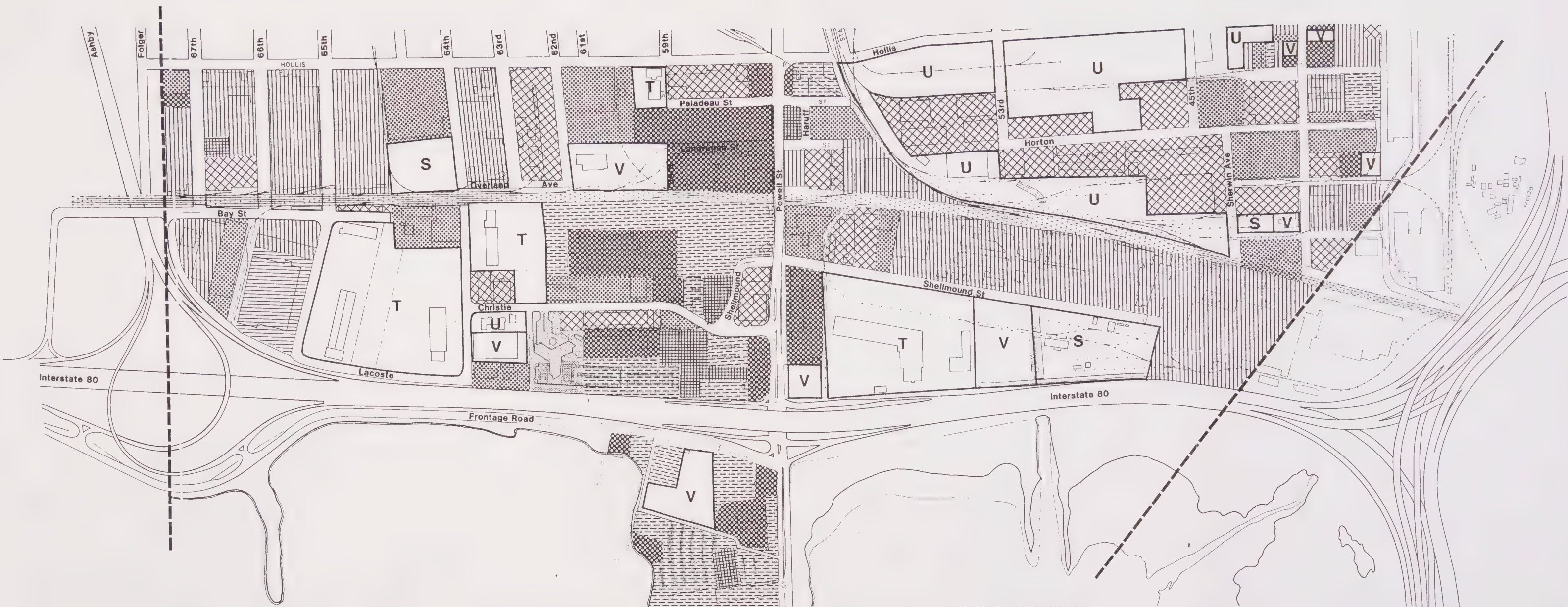
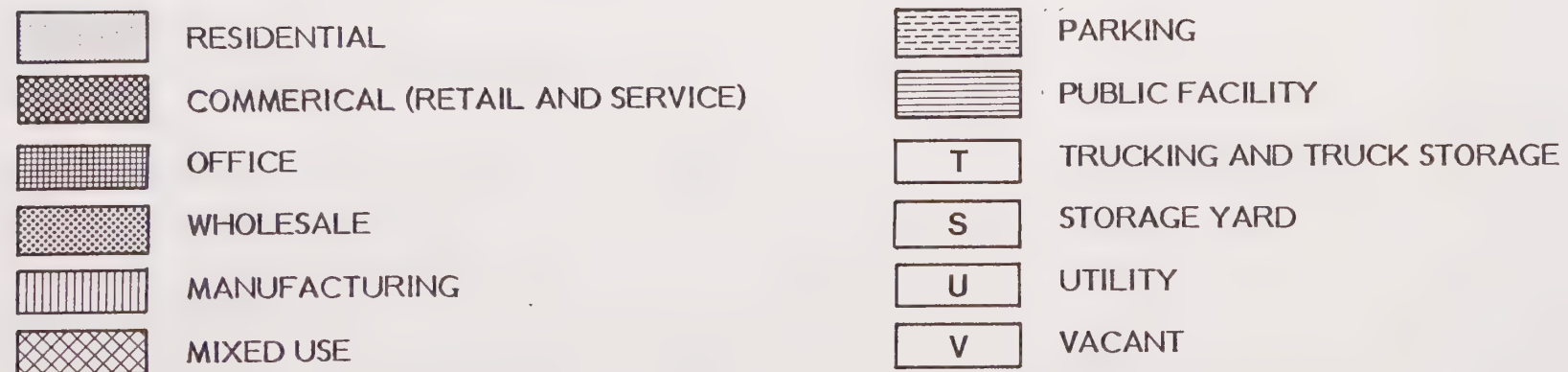


Figure II-1  
EXISTING LAND USE, 1984



# EMERYVILLE SPECIFIC PLAN

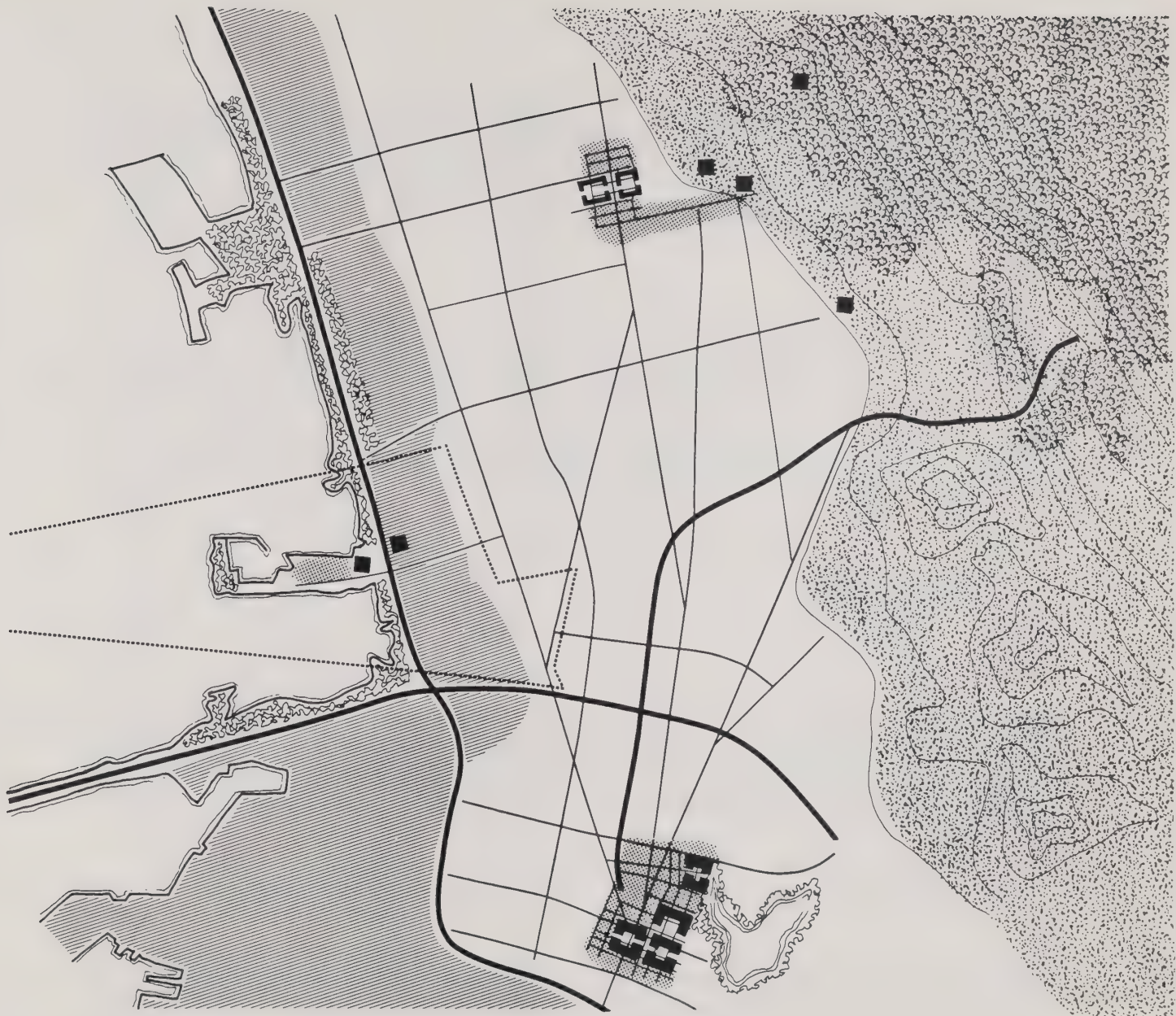
SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers

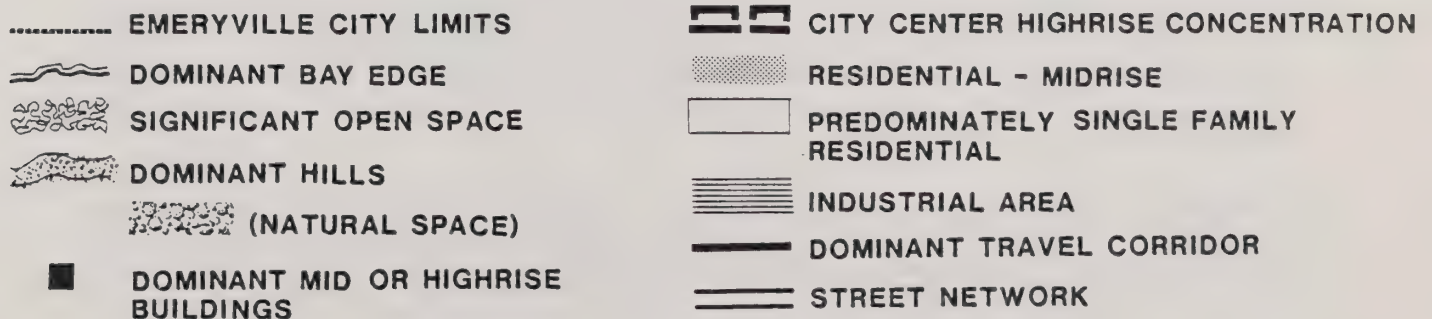






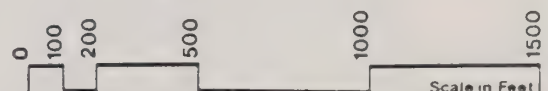


**Figure II-2**  
**REGIONAL PHYSICAL SETTING**



## EMERYVILLE SPECIFIC PLAN

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Development within the Bayfront is characterized primarily by lowrise industrial buildings, open storage yards, and parking lots. Street trees and landscaping are absent, except in the immediate vicinity of newly constructed office and commercial structures near Powell Street. In most places, there are no curbs or sidewalks, and street lighting is inadequate.

## **Adjacent Areas**

Visually, the existing development in the eastern Bayfront is similar to the industrial development east of the railroad tracks. The commercial office development which is beginning to occur in the Bayfront is similar to that which has recently begun to dominate the Peninsula. Office structures are located in the vicinity of Powell Street, a street which provides both a physical and a visual connection between the Bayfront, the Peninsula, and East Emeryville.

## **E. CIRCULATION**

### **Introduction**

The following description of the Bayfront's circulation system is derived largely from the EIR on the Amended Redevelopment Plan.<sup>1</sup> The circulation system in the Bayfront area and current traffic levels are depicted in Figure II-3. Intersection volume/capacity ratios and levels of service for both a.m. and p.m. peak hours are shown in Table II-2.

### **Street System**

**Highways.** The Bayfront is served by several major travel corridors. Interstate 80, serving all of the northern portion of the East Bay and San Francisco via the Bay Bridge, runs north-south adjacent to the plan area. Interstate 580, which connects with Interstate 80 near the southern border of Emeryville, does not offer direct access to the Bayfront but can be reached through other parts of the City. These highways provide the Bayfront with freeway connections to most of the Bay Area.

The Bayfront is served directly by two freeway interchanges on Interstate 80: Ashby Avenue and Powell Street. Most of the traffic to and through the Bayfront is concentrated at the Powell Street interchange, which provides access for all directions of traffic to and from the Bayfront and the City. The Ashby Avenue interchange serves Emeryville only on the northbound (eastbound) off- and northbound (eastbound) on-movements, via a connection to Bay Street.

Interstate 80 is a busy urban freeway that carries traffic volumes of more than 200,000 vehicles daily through Emeryville. The freeway operates well most of the day; however, it experiences peak hour congestion, particularly in the evening,

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<sup>1</sup>City of Emeryville, Final Environmental Impact Report on the Amended Redevelopment Plan, August 1983, pp. 48-61, 66, 67.



because of a bottleneck at the Ashby Avenue interchange caused by a lane reduction from five to four lanes for northbound traffic. Peak period speeds on the freeway vary from a low of about 20 mph during the afternoon and evening congested hours to about 50 mph in the morning peak period. During the remainder of the day, the freeway operates at typical urban freeway speeds. The Ashby Avenue interchange carries about 35,000 vehicle trips daily toward the Berkeley Hills and the Caldecott Tunnel.

During the peak hours, the freeway ramps at Powell Street are congested; congestion in the evening peak hours is somewhat worse than in the morning hours. The Ashby Avenue interchange, by contrast, does not experience significant congestion at any time throughout the day.

**Local Streets.** The local street system in the Bayfront is discontinuous, with Shellmound Street providing the only connection between the northern and southern portions of the Bayfront. The most severe local street congestion is concentrated at Powell Street, particularly where it intersects the northbound and southbound freeway ramps. The congestion is severe enough to occasionally cause the intersection of Powell Street and Christie Avenue to operate below its theoretical capacity. (Its capacity is shown on Table II-2 as level of service C; in practice, however, it sometimes functions at level of service D or E.) Traffic turning right (west) from Christie Avenue onto Powell Street is halted by the vehicles stopped at the signal controlling Powell Street and the freeway ramps.

Development in the Bayfront is accessed only via Ashby Avenue, Powell Street at Christie Avenue, and 65th and 64th Streets. The latter two have sufficient capacity to accommodate additional traffic; however, because they are at-grade rail crossing, they cannot help to relieve the congestion at Powell Street. At unspecified times of the day, the crossings may be blocked by rail operations which may take anywhere from five minutes to well over an hour to be cleared. Traffic which would normally use these intersections is often diverted through the Christie/Powell Intersection, thus increasing its congestion.

## **Public Transit**

The Bayfront is directly served by one local transit route and three transbay commute routes. AC Transit's 57M line connects the Bayfront with the Peninsula and central Emeryville via Powell Street. The FX line on Powell Street provides morning commute service to San Francisco. The Bayfront is served indirectly by the 57 and 72 lines which run along Hollis Street and San Pablo Avenue, respectively, as well as the F and G commute routes to San Francisco along San Pablo Avenue, and the Y line to San Francisco from the Peninsula.

## **Rail Access**

The rail line which forms the eastern border of the Plan area is part of the Southern Pacific Transportation Company's main rail line. This line and many spurs are still actively used for freight operations by businesses in and around the City. Amtrak operates three passenger routes that utilize the line but do not stop within the City.



**Table II-2: Existing Intersection Volume/Capacity Ratios and Levels of Service, 1984**

| <u>Intersection</u>                                | <u>Volume/<br/>Capacity</u> | <u>Level of<br/>Service</u> | <u>Volume/<br/>Capacity</u> | <u>Level of<br/>Service</u> |
|----------------------------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Powell at City Hall<br>(Peninsula)                 | -                           | A                           | -                           | A                           |
| Powell at Frontage Road<br>(Peninsula)             | 0.68                        | B                           | 0.77                        | C                           |
| Powell at Freeway Interchange<br>(Bayfront)        | 0.71                        | C                           | 0.74                        | C                           |
| Powell at Christie<br>(Bayfront)                   | 0.52                        | A                           | 0.60                        | A                           |
| 65th at Bay<br>(Bayfront)                          | -                           | A                           | -                           | A                           |
| 65th at Hollis<br>(East Emeryville)                | 0.54                        | A                           | 0.54                        | A                           |
| Powell at Hollis <sup>I</sup><br>(East Emeryville) | 0.65                        | B                           | 0.93                        | E                           |
| 53rd at Hollis<br>(East Emeryville)                | 0.59                        | A                           | 0.74                        | C                           |

<sup>I</sup> Does not include effects of trains on intersection.

Source: Bob Conradt

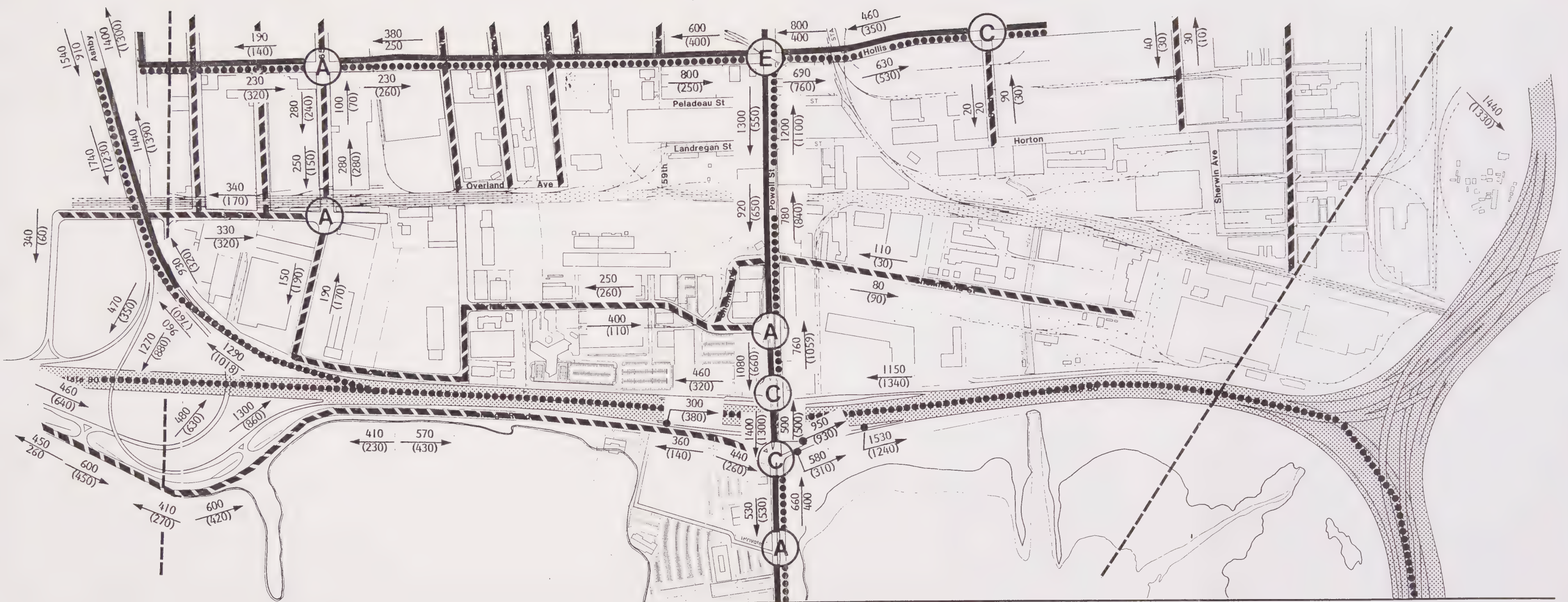
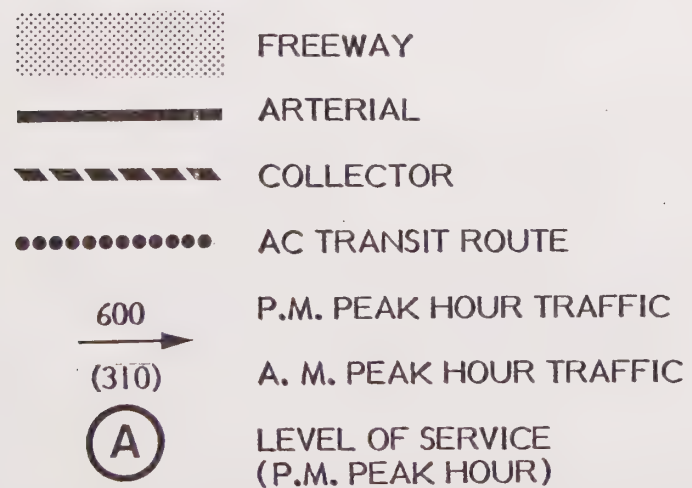


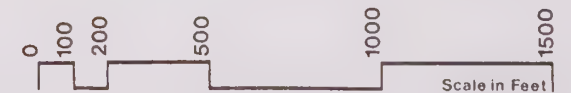
Figure II-3  
EXISTING CIRCULATION SYSTEM  
AND TRAFFIC LEVELS, 1984



# EMERYVILLE SPECIFIC PLAN

SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers







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**Table II-3: Future Transportation Improvements**

1. Interstate 80 HOV (high-occupancy vehicle--3 or more persons per vehicle) lane and interchange improvements at Powell Street and Ashby Avenue.
  2. Powell Street widening from Christie to Interstate 80 with left turn from Powell to Christie accomplished by grade separation.
  3. Bus stops on Powell Street and at Ashby Avenue freeway ramps, and increased frequency of service to San Francisco via AC Transit "L" routes.
  4. Bay Street extension from Shellmound to Ashby Avenue interchange.
- 

### **Proposed Transportation Improvements**

Several large transportation projects are identified in Table II-3. These will be completed within the next 10-20 years. Projects 1, 2, and 3 are proposed in the Caltrans Operational Improvements to I-80 and I-180 Project. Based on current AC Transit policy, service to and from Emeryville via AC Transit L routes will begin when adequate bus stop facilities are available and when demand warrants service. Project 4 is a local project.

The Caltrans Interstate 80 high-occupancy vehicle (HOV) lane project proposes special, separated lanes which can be used by vehicles with three or more persons during peak periods. Because the lanes are designed to bypass major segments of congestion, they would encourage carpooling and transit ridership.

The Caltrans project also proposes significant changes to the Powell Street and Ashby Avenue interchanges which will alter local movement in the Bayfront and affect how people enter the freeway from Emeryville. These improvements are described further in Chapter III.

## F. PUBLIC FACILITIES AND SERVICES

None of the City's public facilities are located within the Bayfront area. City government offices are located on the Peninsula and in the eastern part of the City on Park Boulevard. Cultural and social facilities are provided at the senior citizen center in the Triangle (east of San Pablo Avenue) and at the child care center on the Ralph Hawley School site.

**Recreational Facilities and Open Space.** The Bayfront contains no public recreational facilities. The City operates two: a playground and the Marina. The playground is on Doyle Street between 61st and 62nd Streets. It is a lot-size tot playground of 0.15 acres, and it serves a very localized area. The Marina facility, which is located at the western edge of the Peninsula, combines an open space area with typical Marina facilities: boat docks, a fishing pier, restaurants, and other commercial facilities. The Marina serves not only residents of Emeryville but also residents of the Bay Area. Some recreational services are also available at the City schools and at the senior citizen center.

**Schools.** No school facilities are located within the Bayfront. The City is served by the Emery Unified School District, which operates two schools. Students of grades K-6 attend Anna Yates Elementary School in the Triangle area. Current enrollment is 201 students; the 2-acre site has a maximum student capacity of approximately 275. High school and intermediate students (grades 7-12) attend Emery High School at 47th Street and San Pablo Avenue. Current enrollment is estimated at 249 students, and maximum capacity is about 400. The ratio of students to teachers in the school districts is equal to or lower than the state average.

The school district owns a third facility, the Ralph Hawley School at 61st and Doyle Streets. The district is currently trying to sell the facility as part of its program to pay back state loans. The district has implemented a strict fiscal management program and is making major efforts to reattract students. Given the district finances and the City's student population, however, there are no plans to expand the existing school facilities. The City may assist a private school which is currently leasing the site to purchase it.

### Public Services

**Fire Protection.** The Bayfront is served by two fire stations. The first, on Hollis Street between 63rd and 64th Streets, is just east of the Plan area. A second station is located on San Pablo Avenue. First response to a fire in the Bayfront area would probably come from the Hollis Street station.

The total staff of 28 in the Emeryville Fire Department is shared between the two fire stations. The Citywide staffing level corresponds to 5.6 firefighters per 1,000 residents, which is over four times the East Bay average of 1.32.<sup>1</sup> The relatively

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<sup>1</sup> 1985 Citywide residential population of 5,000 from ABAG, Projections '85: Forecasts for the San Francisco Bay Area to the Year 2005, July 1985; East Bay average from Economics Research Associates, Phase II Working Paper: Fiscal Impact Analysis of Area 5 Redevelopment on Emeryville's General Fund.

high level of staffing reflects the firefighting needs for the extensive industrial and commercial developments.

Each fire station is staffed with a minimally acceptable 3-man engine crew. In the past, 5-7 people for an engine crew was typical in Emeryville, but a 4-man crew would be adequate for most firefighting, evacuation, and truck operation needs. The Hollis Street station has a ladder truck. Ladder trucks can reach only 106 feet high, which could present firefighting problems in tall buildings. Staffing in the fire department is inadequate to evacuate a highrise building while fighting a fire.

According to estimates of the fire chief, the fire department is currently understaffed. At least 39 staff members are currently required.<sup>1</sup> The time required to respond to calls is generally kept within a 3-minute limit, which is accepted as an adequate standard. However, access to the Bayfront area is made difficult by the traffic congestion on Powell Street, especially during the afternoon rush hour, when response times have reached a high of 7 minutes.<sup>2</sup> The at-grade rail crossings at 64th and 65th Streets are unreliable because of the trains which block the crossings at unscheduled intervals. The City participates in the Alameda County Mutual Aid Program, allowing it to draw upon the firefighting resources of other nearby jurisdictions.

Two methods for improving response times through the Powell Street congestion have been discussed. The first, a light locking system which would allow the fire department to override all signals along Powell Street and switch them to green, is currently being installed. The second option is to locate a fire station on the west side of the freeway. Under this solution, service to the Bayfront could still be constrained by traffic at the Interstate 80 interchange.

**Police Protection.** The Emeryville Police Department is currently staffed with 23 sworn and 7 civilian officers. This level of staffing results in a ratio of 6 officers per 1,000 residents, compared to the East Bay average of 1.37.<sup>3</sup> Because the City is very small in area, the police department does not patrol by beats, and response times are 2-3 minutes for top-priority calls. Like the fire department, the police department participates in the Alameda County Mutual Aid Program. A Peace Officer Standards and Training (POST) study is currently underway to assess the actual performance and needs of the department.

**Solid Waste Disposal.** Solid waste collection and disposal in Emeryville is conducted by the Oakland Scavenger Company. There are no disposal facilities within the City. The waste is hauled to the company's transfer facility in San Leandro, south of the Oakland Airport, where it is transferred into larger trailer trucks for disposal at the company's Class II landfill in Altamont, which is east of Livermore.

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<sup>1</sup>Ray Vittori, Fire Chief, Emeryville Fire Department, November 12, 1985.

<sup>2</sup>Ray Vittori, Fire Chief, Emeryville Fire Department, November 26, 1984.

<sup>3</sup>1985 Citywide residential population of 5,000 from ABAG, Projections '85: Forecasts for the San Francisco Bay Area to the Year 2005, July 1985; East Bay average from Economics Research Associates, Phase II Working Paper: Fiscal Impact Analysis of Area 5 Redevelopment on Emeryville's General Fund.



## G. PUBLIC UTILITIES

### Introduction

An engineering analysis of the Bayfront area was originally performed as part of the Area Five Redevelopment Plan. The following is largely abstracted from the results of that study.

**Stormwater Drainage.** The City's drainage system collects the stormwater runoff and discharges it into the bay at three locations: (1) west of the freeway opposite 65th Street; (2) near the south side of the Powell Street interchange; and (3) at Temescal Creek. Demand on the storm drain system is greatest during periods when heavy rainfall is combined with high tides.

Although the outfall lines appear to have the capacity to handle at least a 10-year storm, the collection system in some areas lacks the ability to adequately transport the runoff to the outfalls. This is particularly evident along Christie Avenue north of Powell Street, where localized flooding occurs during heavy storms. The current capacity of the 54" outfall along Powell Street is severely impaired because of heavy siltation, and runoff is forced into a 60" relief pipeline that runs to Temescal Creek.

The siltation in the Powell Street line is a major factor in the localized flooding that occurs in the area; however, even if it were unclogged and operating at full capacity, the existing system would not have adequate capacity to convey the runoff from a 10-year storm. It is estimated that the present system could only accommodate the runoff from a 5-year storm.

### Water Supply

The supplier of domestic water to the City is the East Bay Municipal Utility District (EBMUD), which owns, operates, and maintains the existing system. The distribution system consists primarily of 8"- and 10"-diameter "loops" from the main water line in Hollis Street and a 16"-diameter main along Powell Street.

The Powell Street line is connected to an 8"-diameter line in Christie Avenue which, in turn, is connected to a line in 64th Street, thus completing one of the distribution loops. An 8"-diameter line also branches from the Powell Street line and runs south-erly in Shellmound Street. A 6"- to 8"-diameter line begins at the southern terminus of Bay Street and runs northward to connect to lines in 65th and 66th Streets. Another loop system has been constructed around the Pacific Park Plaza condominium project.

At present, there are no identifiable significant deficiencies in the system. Seg-ments of the line were built in the 1920s and 1930s, yet EBMUD does not systemati-cally replace the lines. Instead, segments of the lines are replaced as they fail.

The lines that were built prior to the 1950s and 1960s are cast iron, while lines built in the 1960s and 1970s are made of steel with mortar lining and coating. Sections of

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<sup>1</sup>Whisler-Patri, Warnecke, et al., Area Five Site Plan, October 1983.

asbestos cement pipe can be found in 64th, 65th, and Powell Streets, and in the vicinity of Pacific Park Plaza.

## **Wastewater Treatment**

The existing sanitary sewer system consists of a series of collector lines running from east to west which are fed primarily by north-south laterals. The east-west collectors are owned and maintained by the City of Emeryville and are connected to a major interceptor line owned and maintained by EBMUD.

Sewage from the area between 67th and 62nd Streets is directed to a 30"-diameter east-west collector at 63rd Street. An 18"-diameter east-west line at Powell Street collects sewage from laterals on Christie Avenue and Shellmound Street. The main collector lines run westerly to Interstate 80 where they connect to a major interceptor pipeline that ranges in diameter from 66" just south of Ashby Avenue to 84" south of Temescal Creek. This line conveys wastewater to the EBMUD Sewage Treatment Plant in Oakland. Sewage from Oakland also flows in those collectors.

The existing system is adequate to handle the existing peak dry-weather flow, during which the interceptor flows at approximately one-third capacity. Because of a severe infiltration/inflow problem, peak wet-weather flow pushes the system beyond capacity. EBMUD has initiated a study of the infiltration/inflow problem in the East Bay. Its final report will recommend a 20-year capital improvements program required to alleviate overflow problems.

## **Other Utilities**

Gas and electric service is provided by Pacific Gas & Electric Company (PG&E). Gas mains are located underground within public rights-of-way. A 6"-diameter main line in Powell Street has 4"-diameter branches in Shellmound Street, Christie Avenue, and 64th Street, and a 3"-diameter branch in Bay Street. Electrical service is transmitted via overhead utility lines, with the exception of several businesses near Powell Street and Christie Avenue, which are served by an underground system. There are no major generation, transmission, or distribution facilities in the plan area.

Telephone service is provided by Pacific Bell. The main lines, fed by the trunk lines on San Pablo Avenue, run under Powell Street and overhead on 64th and 65th Streets. The Powell Street line contains approximately 8,000 pairs of telephone lines. This line extends under the freeway to serve the Peninsula and is utilized nearly to capacity at this time. The underground ducts do not have room for additional conventional cables. Pacific Bell has installed smaller fiber-optic cable in the existing conduit, which should be in service by the end of the year.<sup>1</sup> The overhead lines on 64th and 65th Streets are not heavily used at this time. They contain 500 and 1,200 pairs of telephone lines, respectively.

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<sup>1</sup> Len Matson, Engineer, Pacific Bell, August 28, 1985.

Southern Pacific Pipelines, Inc. records indicate that a pair of 8"-diameter petroleum lines run through the western portion of the railroad right-of-way at an approximate depth of 5 feet below ground-level.

## H. ENERGY

The users of energy in the Emeryville Bayfront are industrial manufacturers, offices, and residents of Pacific Park Plaza. Energy is also used for transportation, and indirectly to produce goods for use in the City.

Actual energy use in the Bayfront is not available; however, energy use in the Bayfront will resemble Citywide energy use. PG&E records indicate that manufacturing activities account for two-thirds of all the electrical energy and nearly 90 percent of the natural gas utilized Citywide. Finance, insurance, and real estate account for the next largest amount of energy consumed, approximately 7 percent of the City's total electrical energy.

## I. GEOLOGY

### Historical Setting<sup>1</sup>

Rocks of the Franciscan Formation, deposited from late Jurassic to mid-Cretaceous time (100-140 million years ago), comprise the bedrock underlying the alluvium and waters of the bay. Extensive folding and faulting of the Earth's crust formed the trough that is now San Francisco Bay. This occurred about 3 million years ago. About 1 million years ago, as the surrounding hills eroded, the bay was filled with sediments. Rising sea levels, caused by meltwater from glaciers in other parts of the world, flooded the trough to form the bay.

Prior to 1900, virtually the entire Bayfront area was a part of San Francisco Bay. The edge of the bay's marshland at that time ran along a line which roughly paralleled the existing railroad tracks. Beginning with the construction of the railroad and continuing through approximately 1960, the San Francisco Bay was filled to form the land of the Plan area.

Layers of clayey gravel, silt, clay, and gravel of the Temescal Formation and San Antonio Formation, known as "older bay mud," underlie parts of the bay. Fine sand, silty clay, and mud of more recent age, known as "younger bay mud" (deposited during the melting of the Wisconsin continental glaciers), overlie the older bay mud deposits and often comprise the foundation for artificial fill. The younger bay mud, generally 15-30 feet thick, but reaching thicknesses up to 130 feet, was deposited

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<sup>1</sup> This discussion is abstracted largely from Harold B. Goldman, "Geology of San Francisco Bay," in *Geologic and Engineering Aspects of San Francisco Bay Fill*, California Division of Mines and Geology Special Report 97, 1969.



within the last 9,000 years. The fill that forms the Bayfront lands is mostly clay and/or sandy soil interspersed with construction and industrial waste materials.

## **Geotechnical Hazards**

Three major faults exist within the vicinity of Emeryville. The San Andreas Fault, approximately 16 miles west of the City, is the most active fault in the region. Its two major branches on the east side of the bay, the Hayward and Calaveras Faults, are located approximately 10 miles and 33 miles east of the City, respectively. The largest earthquakes that are likely to occur on these faults (the "maximum credible earthquakes") are estimated at a magnitude of 7.3 on the Richter Scale for the Hayward and Calaveras Faults, and at a magnitude of 8.4 for the San Andreas Fault.<sup>2</sup>

**Ground Shaking.** Seismic activity usually results in ground shaking. The maximum potential ground movement for a given area is a function of the maximum credible earthquake for a given fault, the geologic properties of the area (i.e., soils types), and the distance to the fault. This measure is called maximum ground shaking intensity. Maximum ground shaking intensity for the Bayfront is associated with the Hayward Fault. It is expected to be high due to the relatively unstable soils and nearness of the fault.

The Bayfront could be subject to violent ground shaking, which could cause widespread cracking and collapse in brick and wood-frame buildings, cracking of streets, destruction of foundations, and breaking of utility lines.<sup>3</sup> Damage to the petroleum pipeline owned by Southern Pacific Pipelines could threaten groundwater supplies and pose a fire hazard.

**Surface Rupture.** There are no known faults within the City; consequently, neither a horizontal rupture nor a vertical faulting should create a hazard within the Bayfront.

**Liquefaction.** Liquefaction is the transformation of a granular material (such as sand) from a solid to a liquid state. In a solid state, sand grains are touching each other, and the weight of overlying material (such as landfill) is supported by the sand. Ground shaking from an earthquake can cause the grains of sand to be forced apart momentarily, allowing underlying water to filter up and the granular material to lose its cohesiveness.

Liquefaction potential is a function of earthquake magnitude, recurrence intervals, distance to active faults, and the probability that a soil type would be found in a liquid state. The likelihood that the soils in the Bayfront would actually liquefy,

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<sup>1</sup>City of Emeryville, Final Environmental Impact Report on the Amended Redevelopment Plan, August 1983, p. 125.

<sup>2</sup>Association of Bay Area Governments, Earthquake Hazard Mapping Project, Working Paper 17, December 1983, p. 5.

<sup>3</sup>1908, cited in Roger D. Borchardt, et al., Prediction of Maximum Earthquake Intensity in the San Francisco Bay Region, California, for Large Earthquakes on the San Andreas and Hayward Faults, U.S. Geological Survey MF-709, 1975.

therefore, is extremely low (less than 3 percent), due to the relative infrequency of earthquakes of sufficient magnitude to cause liquefaction.<sup>1</sup>

Should an earthquake of sufficient size occur, either the bay mud, or the landfill, or both could liquefy. If only the bay mud liquefies, buildings placed on top of the fill may experience differential settlement. If, in addition, the landfill liquefies, sand may flow from under buildings, causing them to collapse.

A study performed by Woodward-Clyde Consultants for construction of Pacific Park Plaza<sup>2</sup> indicated that complete loss of soil strength in the artificial fill would not be likely except in some locally loose pockets of sand. The study also found that sands below the groundwater level could experience some failure during moderate to strong shaking, which could cause settling of pile foundations.

**Slope Stability.** Although the terrain in the Bayfront is flat, with slopes of less than 5 percent, land in the Bayfront area could be considered unstable because it is underlain by moist, unconsolidated bay mud, which is subject to flowage.<sup>3</sup>

**Subsidence and Settlement.** Subsidence is the gradual settling or sinking of an area with little or no horizontal motion, usually resulting from groundwater withdrawal. Subsidence is of little concern in Emeryville.<sup>4</sup> Settlement is the gradual downward movement of an engineered structure (e.g., a building) due to the compaction of the unconsolidated material below the foundation. Three types of settlement can occur:

1. Pile settlement due to building loads;
2. Consolidation settlement in the layer of younger bay mud; and
3. Seismically induced compaction settlement in artificial fill.

Artificial fill will settle over time, regardless of the quality and degree of compaction of the material. The amount of settlement depends on the compressibility of the mud, its depth, and the depth and density of the fill.<sup>5</sup>

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<sup>1</sup> Association of Bay Area Governments, Earthquake Hazards Mapping Project, Working Paper 4; Jeanne Perkins, Senior Regional Planner/Earthquake Program Manager, Association of Bay Area Governments, Oakland, California, November 13 and 20, 1984.

<sup>2</sup> Woodward-Clyde Consultants, Geotechnical Engineering Study, Final Design Report, East Bay Park Condominiums, Emeryville, California, June 1981.

<sup>3</sup> Tor H. Nilson, et al., Relative Slope Stability and Land Use Planning in the San Francisco Bay Region, California, Geological Survey Professional Paper 944, 1979.

<sup>4</sup> E. J. Helley, et al., Flatland Deposits of the San Francisco Bay Region, California: Their Geology and Engineering Properties, and Their Importance to Comprehensive Planning, Geological Survey Professional Paper 943, 1979, p. 45.

<sup>5</sup> Mary Dresser, "Land Stability Along the East Bay Shoreline," in The East Bay Shoreline: Selected Environmental Issues, June 1982, p. 34.

Settlement can occur either uniformly or differentially. Uniform settlement in a building can create problems of poor drainage and potential failure of underground utility connections. Differential settlement can cause mechanical problems within a structure, although this can be minimized if the structural engineers are aware of the site conditions. For example, land which is subject to settlement can be surcharged before building or road construction; that is, a calculated load of temporary dirt fill can be placed on the soil for a predetermined period of time. This has the effect of forcing consolidation of the underlying soils.

Gradual long-term settlement can occur from consolidation of the bay mud by the weight of the fill. Since all fill in the Bayfront has been in place for over 20 years, much of the long-term settlement is complete. If, however, grades are raised by more than one foot due to placement of new fills, additional consolidation settlement can be expected.<sup>1</sup> Moreover, earthquake shaking can produce settlement in addition to that caused by consolidation. A study by Woodward-Clyde Consultants indicates that settlement of 1.0-1.5" could be expected in the location of Pacific Park Plaza.<sup>2</sup> This settlement could affect underground utilities and surface-level pavement.

## **Flood Hazards**

**Tsunamis.** Often incorrectly referred to as tidal waves, tsunamis are caused by submarine seismic or volcanic disturbances. The waves increase in size with the distance traveled. The U.S. Geological Survey estimates that a 20-foot wave at the Golden Gate Bridge (an event that is estimated to be possible once every 200 years) could potentially cause a runup of a 10-foot wave in parts of the Emeryville Bayfront adjacent to the freeway,<sup>3</sup> as shown in Figure II-4. The occurrence of a 20-foot wave is highly unlikely, however. During the period from 1868 to 1968, 19 tsunamis were recorded at the Golden Gate tide gauge, and none were higher than 7.4 feet.<sup>4</sup>

**Storm-Induced Flooding.** Flooding from the Bay caused by a storm event does not pose a significant danger to the Emeryville Bayfront. The City participates in the National Flood Insurance Administration program, so flood insurance is available to property owners in the area at subsidized rates. It is not mandatory, however.<sup>5</sup>

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<sup>1</sup>Derived from Woodward-Clyde Consultants, Geotechnical Engineering Study, Final Design Report, East Bay Park Condominiums, Emeryville, California, June 1981, p. 13.

<sup>2</sup>Ibid.

<sup>3</sup>Donald R. Nichols and Nancy A. Wright, Preliminary Map of Historic Margins of Marshland, San Francisco Bay, California, U.S. Geological Survey Open File Report, 1971.

<sup>4</sup>Ibid.

<sup>5</sup>Ray Lenaburg, Civil Engineer, Federal Emergency Management Agency, November 29, 1984.



At one time, Temescal Creek posed a flood problem, but it has since been contained to accommodate the 100-year storm.<sup>1</sup>

**Dam Inundation.** Failure of the dam at Lake Temescal, which drains through Temescal Creek, could present a potential flooding hazard. Dam failure, which could result from considerable seismic activity, would cause Temescal Creek to overflow its banks. Within 25 minutes, most of the southern section of the Bayfront could be inundated, as shown on Figure II-4.<sup>2</sup>

## J. HAZARDOUS SUBSTANCES

### Introduction

Hazardous wastes, defined as substances, materials, or liquids which are left over or generated from chemical processes, are regulated by the California Department of Health Services (DOHS). The state's hazardous waste control laws (Health and Safety Code Sections 25100-25249) give the DOHS authority to regulate the storage, transport, and disposal of specified types and amounts of these wastes.

In cases of contamination of soil or land by improperly handled hazardous wastes, the DOHS has the authority to designate a property as a "hazardous waste property" and lands within 2,000 feet of the contaminated site as "border zone properties" (Health and Safety Code Section 25117.3). Changes in land use and subdivision of lots are restricted on hazardous waste or border zone properties. In cases of contaminated groundwater caused by hazardous wastes leaching from contaminated soil, the Regional Water Quality Control Board (RWQCB) has the authority to compel actions to protect groundwater and surface water quality through the Porter-Cologne Water Quality Act. DOHS also has authority to order clean-up of contaminated groundwater. Because of the close relationship between soil and groundwater contamination, these two agencies coordinate their regulation and enforcement activities.

### Contaminated Sites

Two sites in the Emeryville Bayfront contains evidence of hazardous waste contamination: the Emeryville Marketplace, on Shellmound Street north of Powell Street; and the Delta-Garrett trucking terminal. These are identified in Figure II-4.

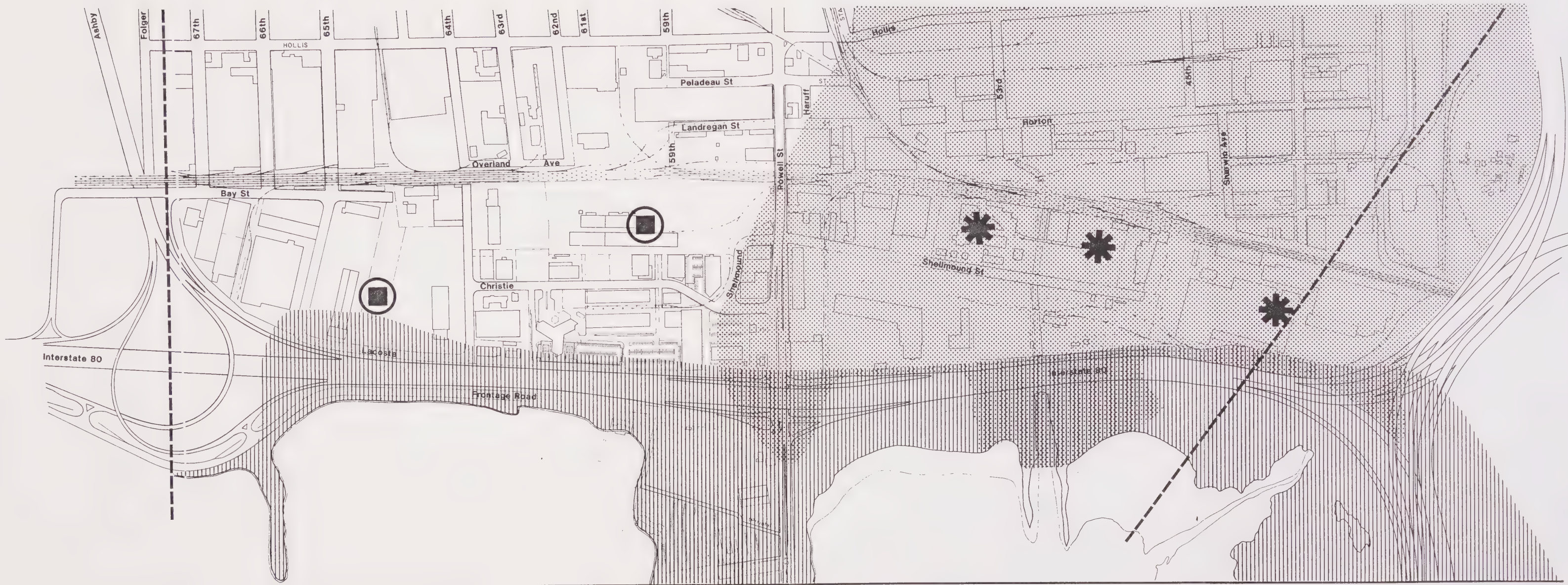
Soils in the Emeryville Marketplace have been found to contain contamination levels for heavy metals exceeding DOHS standards. This site contains several underground tanks from a previous paint products operation. The contaminants have been determined to represent no threat to groundwater supplies, as they are sealed off from the

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<sup>1</sup>City of Emeryville, Final Environmental Impact Report on the Amended Redevelopment Plan, August 1983, p. 128.

<sup>2</sup>Rubin Nino, Alameda County Flood Control, November 16, 1984.





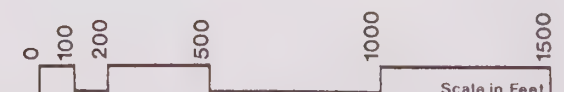
-  DAM FAILURE INUNDATION  
(Lake Temescal)
-  TSUNAMI INUNDATION  
(20 Foot Runup at Golden Gate)
-  POINT SOURCES OF AIR POLLUTION
-  SOIL CONTAMINATION

**Figure II-4  
ENVIRONMENTAL HAZARDS**

# EMERYVILLE SPECIFIC PLAN

SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers







surface asphalt parking lot (and from rainwater which could potentially percolate into the soils).<sup>1</sup> DOHS still exercises some authority over the site, however, and has placed restrictions over its future use. Generally, any use which would allow contact with existing soils would require removal and replacement of soils and/or completely sealing the soil from human contact. Also, since it was not possible to take soil samples over the entire site, future construction activities must be coordinated with DOHS.<sup>2</sup>

In May of 1985, soil samples were taken from random locations on the Delta-Garrett trucking terminal site. Threshold values for lead and zinc were exceeded in some borings, and a strong hydrocarbon smell was noted. Former site uses may have included a paint products operation, which could have contributed to the subsurface metals. Truck fueling overflows and/or potential leakage from underground fuel tanks and lines may also have caused some of the contamination.<sup>3</sup>

### **Storage and Disposal**

Hazardous materials are currently used in industrial operations by several companies located along Bay and Shellmound Streets.<sup>4</sup> The storage of these materials is identified locally by the fire department, which conducts an annual inspection of all businesses in the City.

A wastewater treatment plant operated by the East Bay Municipal Utility District is located just south of the I-80/I-580 freeway interchange. The plant uses chlorine; sulfur dioxide (a gas, similar to chlorine), and ferric chloride, which is a mild acid. Chlorine arrives by rail; the other materials arrive by freeway via the off-ramp to the Oakland Army Base.<sup>5</sup> The possibility of an accident involving these materials exists. Officials of the wastewater treatment plant maintain a contingency plan to response to potential accidents.

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<sup>1</sup>Woodward-Clyde Consultants, Assessment of Subsurface Contaminants: Market-place Property, Emeryville, California, May 1982.

<sup>2</sup>Paul Williams, Waste Management Specialist, Department of Health Services, August 6 and 8, 1985.

<sup>3</sup>Earth Metrics Incorporated, Draft Environmental Impact Report for the Proposed Bay Center Development in the Redevelopment Project Area of the City of Emeryville, July 1985.

<sup>4</sup>Bill Burke, Building Inspector, City of Emeryville, November 27, 1984.

<sup>5</sup>Phil Frye, Wastewater Treatment Superintendent, EBMUD, August 6, 1985.

## Response to Spills

The Association of Bay Area Governments has drafted a plan in response to the need for regional involvement in the coordination of spill response.<sup>1</sup> The Bayfront area is identified in this study as a high-risk area for hazardous spills due to the materials in use by the industries in the area. In addition, Southern Pacific Railroad is identified as a major carrier of hazardous materials.<sup>2</sup>

The state's Office of Emergency Services (OES) is ultimately responsible for coordinating local, regional, state, and federal agencies in response to a spill. An observer of a spill will generally alert the local emergency dispatch (police, fire, OES), who will activate local response networks and notify coordinating agencies such as the OES, if necessary. This will activate the County Mutual Aid Program and involve one of the Hazardous Materials (HAZMAT) Response Teams in the Bay Area.

## K. NOISE

### Noise Descriptors

Noise is measured in decibels (dB), which identify relative levels of sound intensity. Because the human ear does not hear all sounds equally well, various scales have been devised to describe dB measurements. The scale that best approximates the frequency response of the average ear is the "A-scale," and measurements using this weighting system are written as dBA.

A number of different descriptors are used to characterize noise. Among these are:

- $L_{eq}$ : the equivalent energy level. This sound level corresponds to a steady state sound level containing the same total energy as a time varying signal over a given sample period. Thus,  $L_{eq}(24)$  is the average sound level over a 24-hour period.
- $L_{10}$ : the A-weighted sound level exceeded 10 percent of the sample time. Similarly,  $L_{50}$  is the A-weighted sound level exceeded 50 percent of the time. Federal highway noise guidelines are expressed in terms of these descriptors.
- $L_{dn}$ : the day-night average level. This commonly used descriptor gives an average equivalent A-weighted sound level during a 24-hour day, after adjusting the measured sound level upward by 10dB during the period 10 p.m. and 7 a.m. This reflects the fact that people are more sensitive to noise disturbances at night.

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<sup>1</sup> Association of Bay Area Governments, San Francisco Bay Area Hazardous Spill Prevention and Response Plan, Volume I: Issues and Recommendations, December 1982 (draft).

<sup>2</sup>Ibid., p. IV-5.

- **CNEL or Community Noise Equivalent Level:** This descriptor is similar to the  $L_{dn}$ , except that it also adjusts the measured sound levels between 7 p.m. and 10 p.m. upward by 5 dB. The state requires the use of this descriptor of the  $L_{dn}$  to characterize noise sources in a jurisdiction's general plan.

**Existing Noise Levels.** Major noise sources in Emeryville fall into two categories: industrial noise and traffic noise. Fifteen-minute noise measurements were conducted at several locations in the Bayfront and to the east of the main railroad tracks. A 24-hour measurement was made at one location. The following sections describe the existing noise environment at each location and report the measured  $L_{eq}$  recorded during that measurement period.

Pfizer Chemical. Noise measurements were made near Powell and Shellmound Streets to determine noise levels emanating from the Pfizer Chemical plant. Although traffic noise dominated the measurements with an  $L_{eq}$  of 71 dBA, noise emanating from an exhaust fan above the chemical plant was audible. The sound level of the fan was approximately 60 dBA. During the daytime hours, this noise is partially masked by the elevated traffic noise levels in the area. However, according to the plant engineer, a silencer is to be installed in the near future.

Park Avenue between Horton and Hubbard Streets. This measurement location, which is just outside of the Bayfront, is mainly industrial and commercial. The major noise sources are automobiles and trucks on Park Avenue. Typical noise levels range from 60 dBA for automobiles and up to 80 dBA for trucks passing by. Distant industrial equipment noise also was audible. The  $L_{eq}$  measured at this location was 64 dBA.

Powell Street at Christie Avenue. Powell Street is the major arterial for which automobiles and trucks exit Interstate 80. Noise is primarily from automobile and truck traffic. Truck levels measured during the 15-minute period ranged from 80 to 82 dBA. The area is primarily commercial with a new hotel being constructed nearby. Noise also was audible from the distant Pfizer Chemical plant, and to a lesser extent, a distant compressor. At the measurement location, there was line of sight to Interstate 80. The  $L_{eq}$  measured during the 15-minute period was 71 dBA.

Hollis between 62nd and 63rd Streets. This measurement location is a predominantly industrial area east of the Bayfront. The major noise sources were automobiles and trucks. There were several trucks measured during the 15-minute period and their maximum noise levels ranged from 70 to 84 dBA. Also recorded during this measurement were some buses and motorcycles, and one jet aircraft flying by. The  $L_{eq}$  measured during the 15-minute period was 68 dBA.

64th Street and Christie Avenue. The measurement location is a commercial and industrial area. Christie Avenue is the major connection to Powell Street from the Bayfront area. Consequently, there was traffic moving from 64th Street to Christie Avenue. The major noise sources were automobiles and trucks on 64th Avenue. Distant traffic from Interstate 80 also was audible. At the measurement location, Interstate 80 was visible, but partially shielded by nearby buildings. Although maximum levels ranged from 62 to 77 dBA due to traffic along 64th Street and/or Christie Avenue, most of the noise was due to the constant hum of traffic noise on Interstate 80. The  $L_{eq}$  measured during the 15-minute period was 56 dBA.



Bay Street between 65th and 66th Streets. This mostly industrial location is across the street from Grove Valve & Regulator Co. at approximately 80 feet from the Southern Pacific Railroad lines. Major noise sources in this area were automobiles combined with sparse truck traffic. Jet aircraft flying by also were audible and ranged from 69 to 75 dBA. The 15-minute  $L_{eq}$  measured at this location was 66 dBA. Although no trains passed by during the measurement, single-event noise levels up to 90 dBA could be expected due to the train horns.

Interstate 80. To ensure that major noise sources in Emeryville would be accurately recorded, a 24-hour measurement was made at this location. The measurement was made 80 feet from the right-of-way fence on the east side of Interstate 80. Due to the heavy vehicle activity on Interstate 80, the hourly  $L_{eq}$  never dropped below 70 dBA at any time during the 24-hour period. The  $L_{dn}$  recorded at this location was 80 dBA. The measurement was made in an industrial area that is predominantly truck yards.

## **L. AIR QUALITY**

### **Climate**

Air quality in Emeryville is strongly influenced by the winds blowing off San Francisco Bay. These are predominantly southwesterly winds (37 percent) with a significant amount of calm (32 percent), with summer northwesterlies. Air quality in the City is generally good due to the prevailing wind direction. It can, however, contribute to problems at downwind sites such as the Diablo and the Santa Clara Valleys.<sup>1</sup>

### **Air Quality Standards**

The passage of the Air Quality Act of 1967, subsequently known as the Clean Air Act, provided the first national program to control pollution from automobiles and stationary sources. Federal air quality standards are classified as either primary, which seek to protect human health; and secondary, which are designed to protect not only human health but property and the appearance of the air.

California began setting air quality standards in 1969 with the passage of the Mulford-Carrell Act. California employs more stringent regulations for vehicle emissions under a program administered by the Air Resources Board.

### **Regional Setting**

In the Bay Area, federal ambient air quality standards for ozone and carbon monoxide are exceeded. The federal secondary standard for total suspended particulates is exceeded on occasion. Because these air quality standards are not being met, the entire Bay Area has been designated by the U.S. Environmental Protection Agen-

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<sup>1</sup>City of Emeryville, Final Environmental Impact Report on the Amended Redevelopment Plan, August 1983, p. 75.

cy as a "non-attainment" area for these pollutants. The 1982 Bay Area Air Quality Plan, prepared by the Association of Bay Area Governments (ABAG) and other government agencies, contains measures to reduce emissions from both stationary sources and motor vehicles to levels which will result in attainment of air quality standards by 1987.

The Bay Area Air Quality Management District (BAAQMD) guides air quality planning in the Bay Area, and documents and enforces compliance with standards. Since 1972, any company which builds or expands a facility in the Bay Area must first obtain a permit from BAAQMD. The District regulates the quantity and type of emissions allowed from all facilities.<sup>1</sup>

## Local Air Quality

Brief summaries of air quality levels for each of the five pollutants for which federal standards have been established are provided below.<sup>2</sup> Standards were not exceeded for any of the pollutants at Oakland or Richmond, the two monitoring stations closest to Emeryville, in 1984, the latest year for which information is available. In general, the Oakland monitoring station has not exceeded standards for most of the past six years.

**Ozone.** The federal standard of 0.12 parts per million (ppm) is applied to an estimate of the average number of days per year with concentrations above the standard in the last three years. This is called the expected number of annual exceedances (EAE). A site is in compliance if its EAE does not exceed 1.0. The Emeryville area EAE is 0.

**Carbon Monoxide.** The federal 8-hour CO standard is 9 ppm. Emeryville's 8-hour CO concentrations are between 3 ppm and 6 ppm. Exceedance of standards can potentially occur near localized traffic congestion.

**Total Suspended Particulates.** There are two federal 24-hour standards that are not to be exceeded more than once per year: 260 and 150 micrograms per cubic meter correspond to the primary and secondary standards, respectively. The 1984 value in the Emeryville area was 56 micrograms per cubic meter.

**Sulfur Dioxide.** The federal standard for sulfur dioxide is 30 parts per billion (ppb) on an annual average. Levels near Emeryville in 1984 were less than 16 ppb.

**Nitrogen Dioxide.** Nitrogen dioxide is a major ingredient in the formation of photochemical smog and creates a brown discoloration of the air. A state one-hour standard of 25 parts per hundred million (pphm) has been established at the level where the discoloration just becomes visible. The federal standard is an annual average of 5.0 pphm. The San Francisco-Oakland area, which includes Emeryville, experienced 1984 annual average nitrogen dioxide levels of less than 2.5 pphm.

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<sup>1</sup>Bay Area Air Quality Management District, Air Quality Handbook, 1983-1984.

<sup>2</sup>Bay Area Air Quality Management District, Air Currents, Vol. 29, No. 4, April 1985.

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**Table II-4: Major Facilities Emitting Air Pollutants**

| <u>Facility</u>          | <u>Average Annual Emissions (tons/day)</u>                     |
|--------------------------|----------------------------------------------------------------|
| Judson Steel Corporation | .08 Nitrogen Oxides<br>.11 Carbon Monoxide                     |
| Pfizer Incorporated      | .02 Particulates<br>.09 Nitrogen Oxides<br>.02 Carbon Monoxide |
| Myers Drum Company       | .08 Total Organics                                             |

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Source: Bay Area Air Quality Management District, Base Year 1982 Emissions Inventory Summary Report, November 1, 1983, pp. 22, 26, 27, 29.

### **Local Point Sources of Pollutants**

Major facilities emitting significant amounts of air pollutants are listed in the Base Year 1982 Emissions Inventory published in November 1983. These are shown in Figure II-4. Table II-5 identifies those facilities and their average emissions for 1982. Inclusion on this list does not imply violation of air quality standards; information on exceedances of emissions standards at point sources is unavailable.<sup>1</sup>

## **M. WATER QUALITY**

Both Temescal Creek, which runs through the southern portion of the Bayfront, and the San Francisco Bay, into which it drains, can be affected by activity in the Bayfront. There are two primary sources of water pollution: point sources, which are dischargers that dispose of their wastewater, or effluent, from a single point, such as a wastewater treatment plant outfall; and nonpoint sources, which are described as diffuse, areawide sources, such as construction sites and roadways.

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<sup>1</sup> Bob Card, Field Inspector, Bay Area Air Quality Management District, December 5, 1984.



Discharges from point sources are regulated by the Regional Water Quality Control Board, which issues effluent standards as well as permits stipulating the conditions and water quality standards that must be met by certain municipal and industrial dischargers. None of the industries in the Bayfront are considered major dischargers, as most discharge only small amounts of cooling water and/or runoff.

Urban stormwater runoff is a major nonpoint water pollution source in the Bayfront. Pollutants such as suspended solids, heavy metals, and nutrients are often found in samples of urban stormwater runoff. These pollutants are typically deposited onto street surfaces and washed into receiving waters during the initial phases of a storm. A direct example of the problems associated with stormwater runoff is the contamination of shellfish harvesting areas near East Bay creeks and storm drains.

The Regional Water Quality Control Board has made no measurements of the water quality of Temescal Creek; neither has it measured the quality of sewer treatment or stormwater outfalls at the Bay in Emeryville.

Since underground aquifers in Emeryville are not used as sources of drinking water, no study has been conducted to determine overall groundwater quality. Studies were conducted for trace metals in clams in the mudflats adjacent to the Bayfront. These studies concluded that levels of silver, copper, and zinc were not high. Manganese, a non-toxic element, was found at exceptionally high levels. Manganese changes to a soluble form when no oxygen is present, and will travel with water. This could be significant if manganese originated from industries east of the railroad tracks where traces of heavy metals have been found in the groundwater; manganese attracts other metals, the combination of which could be toxic when in a solid state.<sup>2</sup> No studies have been conducted to determine where the manganese originates.

Several years ago, the East Bay Regional Parks District conducted studies of Lake Temescal and its tributaries to determine pollutant levels. The studies uncovered a high level of bacteria in the creeks and determined that much of it was coming from wild and domestic animals. Although no studies were conducted on the creeks below the lake, it is possible that a creek such as Temescal is similarly high in bacteria.<sup>3</sup>

## **N. PLANT AND ANIMAL COMMUNITIES**

The Bayfront is entirely urbanized and no known wildlife or important plant communities exist in the area. West of the freeway, the Emeryville Crescent is a salt

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<sup>1</sup>California Department of Parks and Recreation, East Bay Shoreline: Feasibility Study, December 1982, p. 8.

<sup>2</sup>Sam Luoma, Regional Research Hydrologist, U.S. Geological Survey, October 3, 1985.

<sup>3</sup>Pete Alexander, Water Resources Division, East Bay Regional Parks District, October 8, 1985.

marsh which is the habitat of several endangered species. It is unlikely that any of these species would wander from the Crescent and other shoreline habitats into the Bayfront area, since the Bayfront offers no suitable habitat for this wildlife. The species known to inhabit the Crescent require a high quality tidal marsh environment.<sup>1</sup>

## O. CULTURAL RESOURCES

The California Environmental Quality Act of 1970, as amended, Section 21083.2(a), requires an assessment of unique cultural resources. The following summary of these resources, as they apply to the Emeryville Bayfront, was provided by the California Archaeological Inventory at the Northwest Information Center of Sonoma State University.<sup>2</sup>

### Prehistoric Resources

The first inhabitants of the San Francisco Bay Area were the Costanoan Indians, who lived along the bay's shorelines more than 4,000 years ago. Marshy land, particularly where freshwater creeks entered the bay, were desirable homesites for the Indians. This type of environment was found along virtually the entire eastern edge of the Bayfront, as it was originally part of the bay's marshlands.

One remnant of the Indian occupation of this locale is the shellmounds along the waterfront. The Emeryville Shellmound--one of the largest in the Bay Area--was estimated to have been 1,000 feet long, 300 feet wide and 22 feet high. It was located east of Interstate 80 along Temescal Creek. The railroad track may traverse a portion of the mound remnant, which is approximately 8.5 feet below the surface.<sup>3</sup> The shellmound is listed in the California Inventory of Historic Resources (1976) and in California Historic Landmarks (1982). Archaeological excavations of the shellmounds began as early as 1902. Several other sites in the vicinity of the creek have been recorded.<sup>4</sup>

The portion of I-80 that runs through Emeryville has been archaeologically surveyed, as has a small area near Temescal Creek. These surveys did not identify any archaeological resources. Shellmounds may also occur in marsh areas

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<sup>1</sup>Peter Sorenson, Wildlife Biologist, U.S. Fish and Wildlife Service Endangered Species Office, October 11, 1985.

<sup>2</sup>Christian Gerike, Assistant Coordinator, California Archaeological Inventory, Sonoma State University, correspondence dated December 2, 1984.

<sup>3</sup>City of Emeryville, Final Environmental Impact Report on the Amended Redevelopment Plan, August 1983, p. 131.

<sup>4</sup>Caltrans, Environmental Planning Branch, Archaeological Survey Report for Proposed High Occupancy Vehicle Lanes from Bay Bridge to Carquinez Bridge, May 1982.

with no freshwater source immediately adjacent; therefore, it is moderately to highly probable that other unrecorded prehistoric shellmounds exist in the vicinity of the original shoreline. This possibility is greatest near the northern City limit, where an 1878 map depicts a creek entering the bay. Prehistoric sites prior to the rising of the bay about 5,000-6,000 years ago may exist below the current bay levels.

Based on archaeological records, the California Archaeological Inventory has determined that the shellmounds in the Emeryville area have been destroyed. However, there have been no studies to confirm this, and there is a high possibility that sub-surface deposits of these sites, or of other unrecorded sites, may still exist in the areas of old marshland and creeks.

### **Later History and Culture**

Colonists of the Spanish Empire first introduced agriculture and domesticated animals to the region in 1820. Luis Maria Peralta received the first land grant of more than 48,000 acres, encompassing an area from Emeryville northward to include what is now the northern portion of Alameda County. Mexican citizens settled the area from 1822 to 1846.<sup>1</sup> The mouth of Temescal Creek was used at that time as a landing for the Peralta family's Rancho San Antonio.

The California Gold Rush attracted thousands of immigrants, and the Peralta family could no longer retain control of the entire land grant. Structures had been built throughout Emeryville and by 1878, most of the City had been urbanized. The East Bay's oldest steel mill, Judson Steel, began operations in 1882, initiating the City's extensive industrial development.

None of the older structures in the Bayfront are identified or registered as historic properties by the state Office of Historic Preservation or the National Register of Historic Places.

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<sup>1</sup>California Department of Parks and Recreation, East Bay Shoreline: Feasibility Study, December 1982, p. 13.





### III. ENVIRONMENTAL IMPACTS AND MITIGATION

#### A. INTRODUCTION

The proposed project is a Specific Plan for the Emeryville Bayfront which would allow residential, commercial and civic uses. The project is not an individual development proposal; proposals which conform to the Specific Plan would be considered for approval in subsequent stages.

This chapter of the EIR identifies significant impacts of the proposed project. In accordance with CEQA, this EIR is intended "to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences" (CEQA Guidelines Section 15151). The analysis is more general than it would be if it were a project-level EIR. Supplemental environmental analysis would be performed when individual projects are submitted for approval, except in the case of residential projects which conform to the Plan. The supplemental EIR could be tiered onto this EIR, and would only need to focus on effects which are specific to the project or which were not addressed in this EIR. The supplemental EIR would be allowed for projects which are consistent with the Specific Plan.<sup>1</sup>

The level of development and mix of land uses which could result from the Specific Plan cannot be assessed precisely, due to uncertainty in predicting the response of the market. An assessment of the potential impacts therefore involves the theoretical worst-case scenario, which assumes the most intense development permitted under the provisions of the Specific Plan.

Since the Plan provides flexibility which allows developers to choose among land uses, three theoretical scenarios were developed. Scenario 1 assumes the maximum amount of office space, with maximum housing in the remaining space, and the minimum amount of retail space. This would result in high traffic, energy, and air quality impacts, and would simultaneously maximize demands on public services. Scenario 2 maximizes housing and assumes that offices would be built in the remaining space; this scenario minimizes retail. This would result in the most intense demand on public services, and minimize traffic, air quality, and energy impacts. Population impacts would be notable under this scenario. Scenario 3 represents the regional retail alternative with maximum office use in the remaining space; housing is minimized in this scenario. Of the three scenarios, this could generate the greatest amount of traffic with concomitant increases in energy use, air quality degradation, and noise. The change in Emeryville's employment would be significant, but the population base would not be altered significantly.

Based on these three scenarios, minimum and maximum development can be determined. The actual development that would occur depends upon future market conditions. The maximum actual amount of development would probably be somewhat less than the theoretical amounts. These scenarios are described in greater detail in the land use section.

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<sup>1</sup>See Chapter I for further explanation.

Mitigation measures are proposed which could reduce or eliminate impacts. Three types of measures are identified:

- Mitigation Included with Project. These include policies and regulations contained within the Specific Plan intended to reduce adverse effects of development. These policies are summarized; the reader is referred to the Specific Plan for greater detail.
- Mitigation to be Considered. These are actions which could be taken as individual development proposals are submitted. These measures attempt to address additional concerns which are beyond the scope of this report, and involve issues which can be resolved at future stages of development. The City may require these measures to be implemented for any future development to be approved; or, it may require these measures to be addressed in project level EIRs.
- Mitigation to be Performed by Others. These are actions which will be implemented but which are beyond the scope of the City's responsibilities. These include projects to be built by other agencies or individual developers.

## B. POPULATION AND HOUSING

### Impact Assessment

This assessment considers the theoretical maximum and minimum amounts of housing which could be built in the Bayfront. Housing could be built in the areas designated for housing or mixed use; the maximum level is guided by the bonus FAR. Housing is only required on the largest mixed-use parcels; parcels designated for housing could be built as regional retail instead. The minimum amount of housing is determined by considering the amount required on the largest mixed-use parcels and the maximum amount of regional retail which the Bayfront could support.

A recent market study determined that the Bayfront could only draw 600,000-700,000 square feet of retail space.<sup>1</sup> It is therefore not expected that all of the areas designated for housing could exercise the regional retail alternative. The minimum amount of housing built would realistically be based on a scenario which assumes one regional shopping center with an absolute maximum of 800,000 square feet of retail space, and the minimum amount of housing required in the mixed-use areas. Under this scenario, a minimum of 385 dwelling units would be built in the Bayfront. This would add from 577 to 769 new residents.

If the maximum amount of housing were to be added to all residential and mixed-use areas, up to 4,292 dwelling units could be built in the Bayfront. This could add up to 8,585 new residents. Under this scenario, no regional retail uses would be added to

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<sup>1</sup> Sedway Cooke Associates, City of Emeryville General Plan Program, Existing and Future Setting, January 28, 1985, p. IV-7.



the Bayfront; and no offices or retail above the minimum required would be built in the mixed-use areas.

Realistically, the amount of new residential development which is likely to result from the Plan would not occur at either the minimum or the maximum extremes, but it would fall somewhere within this range. ABAG (the Association of Bay Area Governments) predicted that Emeryville will add fewer than 4,000 new residents by the year 2005.

Under the minimum housing scenario, the project would not contribute to regional housing. This is not seen as a significant adverse impact, since a community the size of Emeryville cannot realistically achieve the jobs/housing balance required of larger cities. Also, under this scenario, it is possible that as few as 34 housing units would be affordable to lower-income households. ✓

Under the maximum housing scenario, a significant amount of affordable housing would be built, and the population increase would more than double the existing Citywide population. Although changes to the demographic profile cannot be predicted accurately, the design and affordability requirements in the Plan suggest that the household and income characteristics of the new population would not differ significantly from those of the existing Emeryville population. Household size would probably be smaller than that of East Emeryville but greater than that of West Emeryville; household income would probably be greater than that of East Emeryville but less than that of West Emeryville.

Any residential development in the Bayfront would significantly alter the social character of the area by changing the demographic character of the neighborhood. This change would not happen immediately; complete development could take 20 years or more. Residential development in the Bayfront would create a separate, distinct neighborhood, and this could affect the entire City by altering the demographic composition and distribution with the City. This effect already has been observed to some degree with the construction of the Watergate and Pacific Park Plaza residential developments.

An analysis of the precise changes in the neighborhood demographics and character are beyond the scope of this EIR. They are nevertheless valid concerns, which would require intensive research. However, the complexity of the issues and the numerous variables that must be addressed suggest that considerable speculative judgment would need to be exercised in responding to these concerns, particularly in light of the fact that the actual type, amount, and mix of residential uses cannot be known.

## **Mitigation Measures**

**Mitigation Included with Project.** Policies for land development in the housing-designated areas include requirements for affordability and a diversity of housing types (see Chapter I). In these areas, minimum and maximum development intensities have been specified in the Plan, in order to ensure proper land utilization and to avoid traffic and visual problems. Land to be utilized primarily for housing is limited to the eastern portion of the Bayfront to avoid freeway noise.

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<sup>1</sup>ABAG, Projections '85: Forecasts for the San Francisco Bay Area to the Year 2005, July 1985, p. 63.

Housing is encouraged by the Plan, with development bonuses. In large mixed-use areas, the minimum housing requirement would help to assure that some new housing is built.

To ameliorate potential problems caused by rapid social change and to avoid a segregated pattern between the City's three neighborhoods, the Plan proposes development which would encourage use of the Bayfront by all members of the community. This would be accomplished by pedestrian links between new and old neighborhoods and by providing retail services and the potential for cultural and community facilities.

**Mitigation to be Considered.** In order to assure that more affordable housing would be built, requirements for housing affordability and type could be applied to mixed-use areas as well as to housing areas. The minimum housing requirement could be applied to smaller parcels in the mixed-use areas. Upper limits could also be placed on the total amount of housing permitted in the mixed-use areas to assure the objectives of the Specific Plan are accomplished.

The City should adopt a housing element which contains programs for new housing construction. Projects proposed in the Bayfront area must comply with these programs.

## C. EMPLOYMENT

### Impact Assessment

The project could eventually displace most of the Bayfront's existing 1,950 jobs. The largest impact would be in the manufacturing, wholesale and trucking sectors. A total of 1,263 jobs would be affected in these sectors. Displacement would largely be the result of increased market pressure to intensify uses in the Bayfront. The Peninsula and the Bayfront are already experiencing this pressure, which is resulting in an increase in the number of jobs in the retail, service, and the finance, insurance, and real estate (F.I.R.E.) sectors.

If all of the existing uses were replaced by the more intensive uses permitted by the Plan, and if all properties were developed up to the bonus FAR, up to 12,000 new jobs could theoretically be created in the Bayfront.<sup>1</sup> The greatest employment change would occur under a scenario which maximizes office and retail construction, and minimizes housing. Approximately 1,000 jobs could be in the retail sector, and the remaining jobs would be in the service and F.I.R.E. sectors. ABAG anticipated much slower employment growth for Emeryville, predicting that fewer than 3,000 jobs would be added Citywide in the next 20 years.<sup>2</sup>

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<sup>1</sup> This number could be higher (up to 18,000) if Transportation Systems Management programs (TSMs) are implemented. Given market conditions, this is considered to be unlikely.

<sup>2</sup> ABAG, Projections '85: Forecasts for the San Francisco Bay Area to the Year 2005, July 1985, p. 66.

The actual number of jobs resulting from the project would likely be lower than the maximum 12,000, since it is not probable that all development would occur at maximum intensities. The number of jobs would also be lower if more residential development and a concurrent decrease in office and retail development were to occur. Under any scenario, most existing jobs would be displaced.

### **Mitigation Measures**

**Mitigation Included with Project.** The Plan provides bonuses for development for retail, hotel, cultural and entertainment uses. This would encourage some employment diversity. The Plan permits non-conforming land uses to remain unless more than 50 percent of the structure in which they are housed is destroyed by fire or natural disaster. The Plan does not require existing businesses to move; some of the displacement would occur as businesses move voluntarily.

**Mitigation to be Considered.** The City should identify areas within the City for relocation of displaced businesses. These areas can accommodate a wide diversity of businesses, including service sector, manufacturing, and wholesale activities. However, these areas only can accommodate uses which are permitted by the City. Trucking activities will not be permitted. Policies currently are being formulated that would assist businesses in their relocation efforts.

## **D. LAND USE**

### **Impact Assessment**

The Plan would permit almost complete redevelopment of the Bayfront area, altering the land use of the project area from the predominant manufacturing uses to more intensive office, commercial and residential uses.

Complete development of the project area according to Plan proposals, or "build-out," would depend upon market conditions and level of site improvements in the coming years. Build-out could be expected to occur as long as 20 years or more from now. New development would take place as existing uses move out of the Bayfront. It is possible that some of the existing uses will remain for 20 years or more, although in most cases, this is not likely, given the increasing pressure to intensify development in the Emeryville Bayfront.

**Development Scenarios.** The Plan would allow a great deal of diversity in land uses. The areas designated for mixed use can be built as primarily offices, retail, housing, or some combination of these; the areas designated for housing may exercise a regional retail alternative. Although the Plan is flexible, actual development would be limited by what is physically possible and by what the market would attract. Three scenarios, described below (and in Chapter I), illustrate the range of development which could take place in the Emeryville Bayfront.



Office Emphasis. If all mixed-use areas and office/commercial areas were to be developed to the maximum permitted in office space, up to 2.9 million square feet of offices could be built in the Bayfront. This scenario would presume only the minimum amount of retail space (approximately 238,000 square feet, required on the ground floor of mixed-use areas) and up to 1,500 dwelling units.

Additional office development beyond the 2.9 million square feet would only be permitted upon implementation of Transportation Systems Management programs (TSMs) which could reduce traffic levels to what they would be at lower development intensities. Theoretically, implementation of TSMs could raise the level of office development to 4.7 million square feet; however, it is not expected that this amount of additional office space would be constructed, since it would be difficult to implement TSMs sufficient to ameliorate traffic impacts, and since it is unlikely that Emeryville could attract that amount of office space.<sup>1</sup>

Housing Emphasis. If the areas designated for mixed use and housing were to develop up to the maximum allowed for residential use, up to 4,300 dwelling units could be added to the Bayfront. This scenario presumes a smaller amount of retail and office space would be added to the Bayfront (up to 238,000 square feet of retail and 1.1 million square feet of office).

Retail Emphasis. It is possible that a regional retail shopping center could be built in the Bayfront. A recent market study<sup>2</sup> indicated that one shopping center of 600,000 to 700,000 square feet could be supported by the East Bay market. A major land-owner is presently discussing the possibility for the southern portion of the Bayfront. It is clear that, although several areas of the Plan are designated for possible regional retail space, an absolute maximum of about 800,000 square feet could be supported. Furthermore, this possibility depends to a certain extent on regional activity; if a regional shopping center were built in a neighboring city, that possibility could be precluded in Emeryville. Neighborhood-serving retail uses would be located in the mixed-use and office/commercial areas. Up to 238,000 square feet of neighborhood retail could be supported in these areas, although the Plan permits more.

**Land Use Changes.** The office emphasis scenario would result in land uses which are similar to those that are presently developing in the Peninsula and parts of the Bayfront. If more housing were to develop, the Bayfront would take on the character of an urban residential neighborhood. The retail scenario could add a regional shopping center to either the housing or office scenarios, reducing the total amount of office space or housing. Hotels could be built under all options, in addition to the one which was recently completed.

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<sup>1</sup>In 1983, 13 million square feet of office space existed in all of Alameda County, with nearly a 14 percent vacancy rate. A recent market survey anticipated that the City of Emeryville could absorb 50,000-70,000 square feet of office space per year. (Source: Sedway Cooke Associates, City of Emeryville General Plan Program, Existing and Future Setting, January 28, 1985, pp. IV-8 to IV-9.)

<sup>2</sup>Sedway Cooke Associates, City of Emeryville General Plan Program, Existing and Future Setting, January 28, 1985, p. IV-7.

These scenarios represent development extremes. It is quite likely, given the objectives outlined in the Plan and the market for development, that less than the maximum permitted would be built and that the development which would result from the Plan would be more of a mix between office, retail, and housing uses, with the regional shopping center as a major option.

All development that could result from the Plan would represent a major change from existing land uses, and a significant intensification of development densities. This is occurring presently, as older uses in the Bayfront are moving out and office and commercial uses replace them. The Plan would accelerate this process beyond that which is presently occurring.

If all uses were to develop up to the bonus FAR, and if TSMs were implemented for all office development, over 6 million square feet of new uses could result. This situation would occur only if there is an unexpectedly intense demand for land, and only after development of a highly efficient internal transit system.

Land use conflicts are not expected between land uses as designated in the Plan; housing would be concentrated in the eastern portion of the Plan area, separated from industrial uses in East Emeryville by a roadway and the Southern Pacific railroad tracks, and buffered from freeway noise by offices which would be located nearer the freeway. A pedestrian-oriented spine of open space would run north-south, separating the office and residential uses and joining the eastern and western portions of the Bayfront with an outdoor retail mall.

A major result of the Plan would be the addition of a significant amount of open space: a certain percentage of each site must be devoted to publicly available and useable open space (as shown in Table I-2); additional standards govern the provision of open space for each dwelling unit and for commercial sites. The Bayfront would portray an image of Emeryville which is more attractive and organized in terms of community identity, circulation, and orientation than that which presently exists.

The Plan would also result in the complete alteration of the community. The predominant industrial uses could be replaced by an intensely developed urban financial center, residential neighborhood, or a combination of those with a regional shopping center.

Before the entire Bayfront is entirely built out, some conflicts could exist between new uses and those existing uses which generate noise odors or dust. This problem could be significant for new residential uses.

## **Mitigation Measures**

**Mitigation Included with Project.** The Plan specifies environmental performance standards which protect designated uses on sites adjoining commercial and industrial activities. Standards have been developed regarding dust and particulates, noise, vibration, odors and hazardous materials and wastes.

Siting, landscaping and open space standards would assure that adjacent uses are physically and visually compatible. These standards could help to minimize the conflicts which might be experienced between new and presently existing uses; however, these problems will not be entirely eliminated by the performance standards specified in the Plan.

**Mitigation to be Considered.** During the project review process, the City may discover, on a case-by-case basis, individual projects which could potentially conflict with existing uses. Alternative design techniques, such as landscaping or noise barriers, could be suggested at that time.

## E. URBAN DESIGN

### Impact Assessment

While the Specific Plan would dramatically increase the existing scale and intensity of development, affecting views from vantage points outside of the Bayfront, it would also provide the Bayfront an identifying urban character which is more aesthetically pleasing than the existing development, which currently consists primarily of individual concrete tilt-up buildings and open storage yards. The present lowrise industrial character of the Bayfront would be altered to form a mid- to highrise community of offices, shops and residences. Pedestrian activity would be concentrated at the Town Center and along the open space/retail mall which would run north-south through the project area. Each of the theoretical development scenarios would produce generally similar results.

Taller buildings would be concentrated in the central portion of the Bayfront, near the Town Center. Here, bay views from the Berkeley hills and views of the hills from the Bay Bridge and Interstate 80 have already been interrupted by existing highrise buildings such as the Pacific Park Plaza tower and the highrise office buildings on the Peninsula. In the northern and southern portions of the Bayfront, views to such prominent landmarks as the Claremont Hotel and the Campanile on the U.C. Berkeley campus would be preserved by lower height limits. Views to the Bay from the Interstate 580 freeway on the approach to the Bay Bridge could be further impacted by the heights of buildings in the vicinity of the Pacific Park Plaza tower.

The Plan would significantly alter the character of the Bayfront; however, all impacts would not necessarily be adverse. At least 13 acres of open space would be provided; some of this would be incorporated into the pedestrian mall, and some would consist of separate, independent parks. Temescal Creek would be upgraded from a concrete culvert to form a visual and aesthetic amenity in the southern portion of the Plan area. These are considered positive impacts.

From a regional perspective, the type of development in the Emeryville Bayfront would be similar to what is beginning to happen with much of the Northern Alameda County bay shoreline. In Berkeley and Albany, projects have been initiated to develop residential and commercial uses along the shoreline.

### Mitigation Measures

**Mitigation Included with Project.** Development standards and height limits contained within the Plan would assure that views are protected, that buildings fronting onto the pedestrian mall achieve a pedestrian scale, and that the Bayfront develops into a pleasing, cohesive environment. The Plan also calls for retention and reuse of buildings which are architecturally interesting and consistent with the future design and organization of the Bayfront.



**Mitigation to be Considered.** The City could initiate a design review procedure to provide a check that proposed projects are consistent with the objectives of the Plan.

## F. CIRCULATION

### Impact Assessment

Development permitted by the Specific Plan would generate additional traffic in the Bayfront and in surrounding areas. The internal circulation system would be improved to serve the new development. As shown in Figure III-1, the major components of the improved circulation scheme would be the extension of Bay Street to the southern area of the Bayfront, to form Bay Boulevard, and the widening and upgrading of several other streets. A railroad overcrossing to Bay Boulevard is to be constructed along Yerba Buena Avenue, to provide a connection to East Emeryville. These road improvements are to be in place prior to development at higher intensities (standard or bonus FAR).

A pedestrian mall is proposed to provide auto-free circulation throughout the Bayfront along a north-south corridor, as well as to East Emeryville and the Peninsula by grade-separated crossings. A bicycle route is proposed along Bay Boulevard.

The development intensities encouraged in the Plan would make improved transit service more feasible. The plan proposes transit routes to be located along Christie Avenue, connecting east and west to Bay Boulevard and the bus pad on Interstate 80.

Freeway improvements will be made by Caltrans. These will include a high-occupancy vehicle (HOV) lane, and improvements to the Powell Street and Ashby Avenue interchanges. The design of these improvements has not yet been finally decided. The Specific Plan proposes the alternatives illustrated in Figure III-2.

**Traffic Levels.** A traffic analysis conducted for this report<sup>1</sup> determined the worst-case impacts of the Specific Plan based upon the maximum number of peak-hour automobile trips generated by each of the three scenarios described in the beginning of this chapter. Office and retail uses (Scenario 3) would generate the highest number of peak-hour trips. The projected traffic volumes and levels-of-service are shown in Figures III-1 and III-2. Volume/capacity ratios for intersections in the vicinity of the project area are provided in Table III-1. The impact would be most severe along Powell Street, where levels-of-service "D" and "E" could be encountered at intersections during commuter traffic. This does not represent an impairment of existing intersection operation, however. Although these intersections theoretically operate at levels-of-service "A" and "C" under existing conditions, congestion on the freeway causes them to function below their theoretical capacity. Improvements to the intersections and the freeway as proposed would bring the theoretical operating capacities closer to the actual capacities, which are as shown on Figures III-1 and III-2, and listed in Table III-1.

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<sup>1</sup>See Appendix A.

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**Table III-1: Future Intersection Volume/Capacity (V/C) Ratios and Levels-of-Service (LOS)**

| <u>Intersection</u>            | <u>A.M. Peak Hour</u> |            | <u>P.M. Peak Hour</u> |            |
|--------------------------------|-----------------------|------------|-----------------------|------------|
|                                | <u>V/C</u>            | <u>LOS</u> | <u>V/C</u>            | <u>LOS</u> |
| Christie/Powell                | 0.91                  | E          | 0.81                  | D          |
| Freeway/Powell On-Ramp         | 0.87                  | D          | 0.98                  | E          |
| Powell/Frontage Road           | 0.95                  | E          | 0.99                  | E          |
| Powell/City Hall               | 0.36                  | A          | 0.62                  | B          |
| Ashby/Frontage Road            | 0.33                  | A          | 0.65                  | B          |
| Ashby/Freeway                  | 0.52                  | A          | 0.37                  | A          |
| Ashby/Bay                      | 0.88                  | D          | 0.75                  | C          |
| Bay/new street south of Powell | 0.37                  | A          | 0.68                  | B          |
| Bay/59th                       | 0.34                  | A          | 0.58                  | A          |
| Bay/65th                       | 0.71                  | C          | 0.80                  | C          |
| Yerba Buena/Hollis             | 0.48                  | A          | 0.71                  | C          |
| Park/Hollis                    | 0.31                  | A          | 0.41                  | A          |
| 55th/Hollis                    | 0.53                  | A          | 0.62                  | B          |
| Powell/Hollis <sup>1</sup>     | 0.58                  | A          | 0.90                  | C          |
| Hollis/65th                    | 0.57                  | A          | 0.57                  | A          |

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Source: Robert Conradt

<sup>1</sup> does not include effects of trains on intersection

**Public Transit.** The project would generate some demand for public transit. Although the actual impact on existing transit systems cannot be quantified precisely, some assumptions can be made about the maximum number of transit trips generated under the development that could occur under the provisions of the Plan. Table III-2 lists the maximum transit ridership that could be expected during the peak period. The total number of trips as shown would vary according to the actual mix and intensity of development in the Bayfront. It is possible that the actual number of trips would be lower than these figures, since they assume that 80 percent of the trips would occur during the peak hour. Nevertheless, if the maximum number of transit trips generated were to reach this level, the Plan could have a significant impact on transit service. Both AC Transit and BART could be affected. If the projected transit improvements by these agencies could not accommodate the increased demand, the transit agencies would need to upgrade service to and from the Bayfront.

This is not necessarily seen as an adverse impact. The Specific Plan contains provisions for transit routes, and the Bayfront should be able to accommodate increased transit service. Furthermore, the improvements in transit service could encourage greater use of public transit; this would be consistent with the Metropolitan Transportation Commission's Regional Transportation Plan and the Bay Area Air Quality Improvement Plan.

It should be noted that the number of trips shown in Table III-2 is the maximum that could be generated if development were to occur at the standard FAR. The figures do not account for development at the bonus FAR, in which case the developers of a project would be required to implement TSMs to reduce traffic that could be generated by the project. This implies that the increased number of commuter trips which could result from increased development intensity could be accommodated either by further utilization of public transit or by project-specific TSM programs, such as vanpooling, carpooling, or staggered work hours. In either case, the developer would be responsible for assuring that these improvements are made.

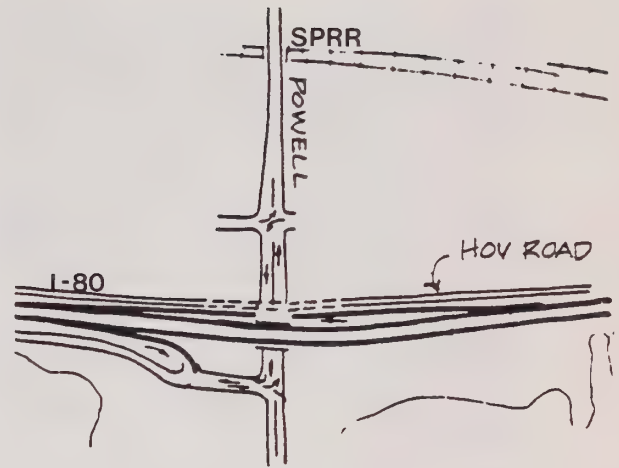
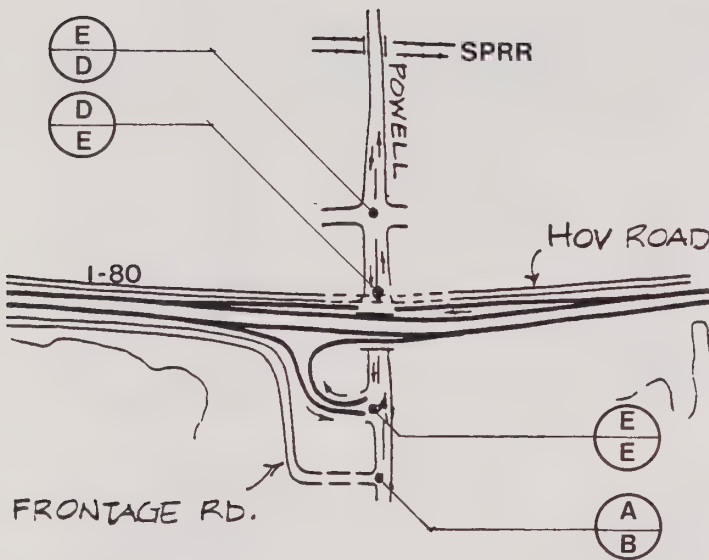
## **Mitigation Measures**

**Mitigation Included with Project.** No development at increased intensities (standard and bonus FAR) would be permitted unless improvements have been made to local roads. TSMs (Transportation System Management programs) would be required if development intensities of office developments and other "non-beneficial" uses exceed the standard FARs. The TSMs must bring the traffic levels down to what they would be at the standard development intensities. TSM programs may include an areawide system of transit improvements, or individual developers could initiate programs such as carpooling, vanpooling, staggered work hours and provisions for bicycle storage facilities and lockers. Appendix D describes possible measures. Minimum development intensities have been specified in the housing areas, in order to ensure proper land utilization and increase the viability of a transit system. Minimum and maximum parking spaces have been described in the Plan, in order to encourage use of transit.

The project is consistent with the Metropolitan Transportation Commission (MTC) Regional Transportation Plan<sup>1</sup> in that it would discourage dependency on the private automobile and encourage transit ridership and increased use of bicycles as a transportation mode. The Plan calls for construction of the Caltrans HOV lane to permit bus ingress and egress at 64th Street and includes provisions for transit stops. The



←N



POWELL ST.

←N

ASHBY AVE.

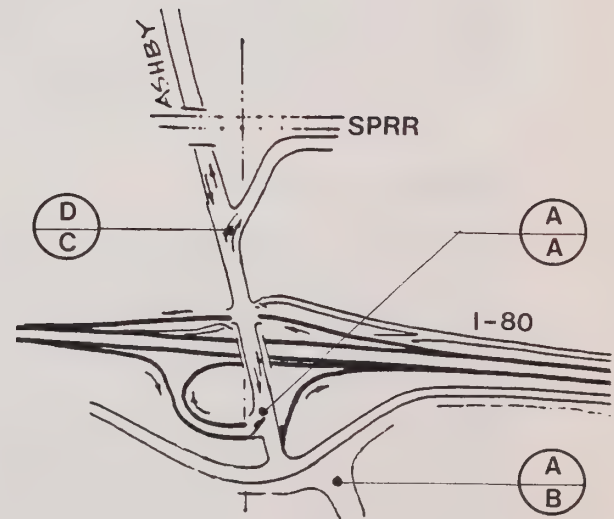
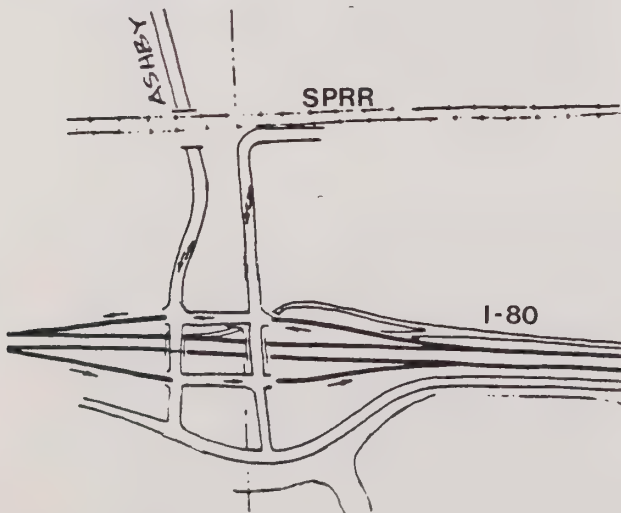


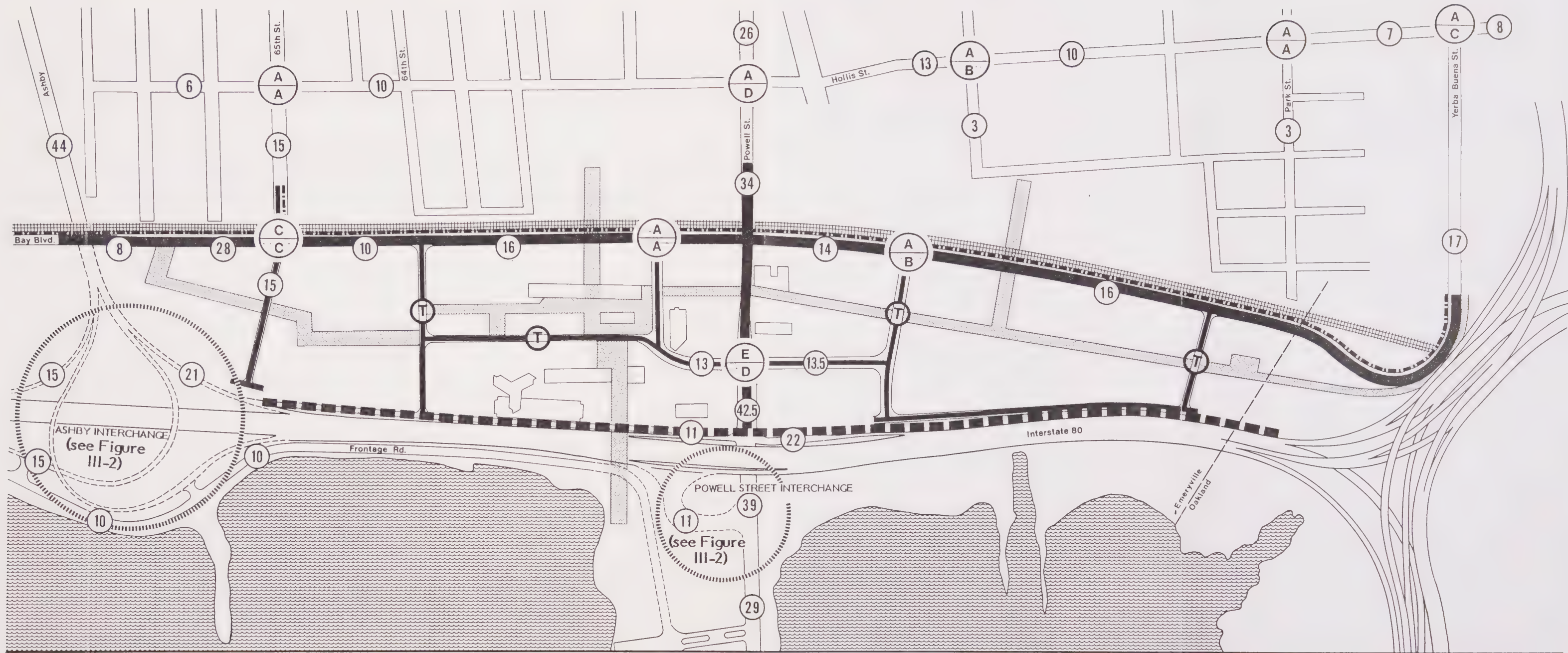
Figure III-2  
ALTERNATIVE INTERCHANGE SCHEMES  
AND INTERCHANGE LOCATIONS

|   |
|---|
| D |
| E |

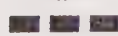
 INTERSECTION LEVELS-OF-SERVICE  
(A.M./P.M.) (see Figure III-1)

EMERYVILLE SPECIFIC PLAN

SEDWAY COOKE ASSOCIATES  
Urban and Environmental Planners and Designers



FREEWAY INTERCHANGE IMPROVEMENT



H O V (HIGH-OCCUPANCY VEHICLE) LANE



ARTERIAL



DISTRIBUTOR



PEDESTRIAN ROUTE



BICYCLE ROUTE



TRANSIT STOP



INTERSECTION LEVELS-OF-SERVICE



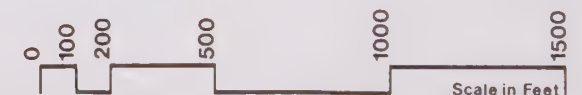
AVERAGE DAILY TRAFFIC (ADT)  
IN (1,000s)

**Figure III-1**  
**CIRCULATION ELEMENT**  
**AND PROJECTED**  
**TRAFFIC LEVELS**

# EMERYVILLE SPECIFIC PLAN

SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers







**Table III-2: Peak Period Transit Ridership**

| Destination              | Percent Distribution of Trips |                | Maximum Total Transit Trips |          |       |                      |          |       |
|--------------------------|-------------------------------|----------------|-----------------------------|----------|-------|----------------------|----------|-------|
|                          |                               |                | Office/Retail Scenario      |          |       | Residential Scenario |          |       |
|                          | Employees                     | Dwelling Units | Employee                    | Resident | Total | Employee             | Resident | Total |
| Internal-Emeryville      | 4                             | 12             | 42                          | 5        | 47    | 15                   | 52       | 67    |
| I-80 North (East)        | 28                            | 15             | 296                         | 5        | 301   | 105                  | 65       | 171   |
| Ashby-Berkeley           | 6                             | 5              | 63                          | 2        | 65    | 23                   | 21       | 44    |
| Powell-San Pablo/Oakland | 1                             | 3              | 11                          | 1        | 12    | 4                    | 13       | 17    |
| Highway 24               | 6                             | 3              | 63                          | 1        | 64    | 23                   | 13       | 36    |
| I-580 East               | 19                            | 5              | 201                         | 2        | 203   | 71                   | 21       | 92    |
| Oakland                  | 7                             | 6              | 74                          | 2        | 76    | 26                   | 26       | 52    |
| Highway 17 South         | 13                            | 15             | 137                         | 5        | 142   | 49                   | 65       | 114   |
| I-80, Bay Bridge         | 15                            | 33             | 158                         | 12       | 170   | 56                   | 143      | 199   |
| Powell Street, Peninsula | 1                             | 3              | 11                          | 1        | 12    | 4                    | 13       | 17    |
|                          |                               |                | 1,056                       | 37       | 1,083 | 375                  | 432      | 807   |

Sources: Bob Contradt, SCA.

Note: Assumes that 80 percent of employees and residents would travel at peak period, and that 10 percent would utilize transit. Does not account for Citywide growth.

traffic analysis did not consider the effects of public transit on intersection capacity; development of a transit system could reduce traffic levels on some road segments and improve intersection levels-of-service.

**Mitigation to be Considered.** The City could pursue funding from the Metropolitan Transportation Commission and federal and state sources for individual transportation projects which either: encourage use of transit or ride sharing; reduce overall traffic levels; increase the use or improve the safety of bicycle and pedestrian circulation.

The City could exact fees for a transit improvements fund from projects which are built at higher intensities. These fees could be used in place of TSM programs, so that the City could implement areawide transit improvements.

Some street intersections could be reconfigured to allow more efficient movement of traffic, thereby improving the projected levels-of-service; however, this measure could be prohibitively expensive.

**Mitigation to be Performed by Others.** Construction of the HOV lane and interchange improvements to Powell Street and Ashby Avenue are to be completed by Caltrans. Individual developers could implement additional transportation measures, such as park-and-ride lots, carpooling programs, or bicycle parking.

## **G. PUBLIC FACILITIES AND SERVICES**

### **Impact Assessment**

**Recreational Facilities and Open Space.** By specifying a percentage of each parcel to be devoted to public open space, the Plan would provide at least 13 acres of open space. Temescal Creek would be upgraded, providing passive recreational and visual amenities. The pedestrian mall also would be included in this figure. Development standards require the dedication of at least 200 square feet of publicly accessible open space for each dwelling unit constructed, or 20 percent of each commercial-use site.

**Schools.** As discussed in Section B (Population and Housing), the additional population that could be added to the Bayfront could vary widely. As few as 600 or as many as 8,600 new residents could inhabit the Bayfront when the project area is completely built out. School-age children could represent as little as 5-10 percent of the new population, although the proportion could be greater in residentially designated areas, where 40 percent of the housing must be designed and made available to families with three or more members.

If only the minimum amount of housing is added to the Bayfront, as few as 30-60 schoolchildren would be added to the Bayfront, and the Plan would not have a significant effect on the school system. If, on the other hand, the maximum amount of family housing is developed, as many as 1,000 new schoolchildren could be added to the Bayfront. This would have a serious effect on the school district. In this case, at least one additional school would be required. The Ralph Hawley School site may have to be reopened, and additional personnel would be required.

**Police and Fire Protection.** Emeryville's present Police and Fire Departments are proportionally much larger on a per-capita basis than any others in the East Bay. Development of the Bayfront according to the Specific Plan would not require these departments to extend their geographic service areas, but additional personnel and equipment would be required. Since development of the Emeryville Bayfront would approach that of the remainder of the East Bay, the East Bay average office-to-resident ratios may be adequate for a determination of impact.

If the maximum permitted amount of housing were to be built in the Bayfront, up to 4,300 dwelling units could be constructed, adding from 6,400 to 8,600 new residents to the existing population of Emeryville. Applying the East Bay average of 1.32 fire-fighters and 1.37 police officers per 1,000 residents only to the additional population, a maximum of 11 new firefighters and 12 new police officers would be required to serve the new development. (If these figures were applied to the Citywide population, the Plan would be determined to have no impact on the Police and Fire Departments.) The need for additional officers would occur incrementally over time, and would depend on the type and intensity of development that occurs as a result of the Plan. Emeryville Fire Chief Ray Vittori has stated that the Specific Plan development would ultimately require 12 new firefighters; however, he estimates that the City currently is understaffed by 14 people. Thus, additional development in the Bayfront could add to the existing burden in the Fire Department.<sup>1</sup> The requirement discussed above represents a worst-case scenario; development at this intensity may not occur.

**Solid Waste.** The worst-case scenario in terms of solid waste generation would be if the Bayfront were to develop up to the maximum amount of office, with the regional retail alternative and an additional hotel. The project could generate a maximum of from 7 to 11 tons per day of solid waste.<sup>2</sup> The waste would be taken to the Class I-II landfill at Altamont. The landfill has enough capacity to last another 60-70 years, or longer if the waste were incinerated or if recycling efforts increased. Development of the Bayfront according to the Plan would not materially affect the capacity of this regional landfill.<sup>3</sup>

## **Mitigation Measures**

**Mitigation Included with Project.** The Plan would provide more recreational facilities and open space than presently exists in the Bayfront. The amount provided would contribute to the Citywide need, and could contribute to the regional need to a lesser degree.

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<sup>1</sup>Fire Chief Vittori noted that existing staffing is at 25 persons, and presently the department requires 39. Halfway through Plan build-out, he estimates a Citywide need of 48 person; at completion, 51 staff members would be required. (Telephone communication, November 12, 1985.)

<sup>2</sup>Based on California Solid Waste Management Board, Bulletin No. 2: Solid Waste Generation Factors in California, July 8, 1974, with waste figures updated for 1985.

<sup>3</sup>Mike Corsetti, Assistant Engineering Manager, Oakland Scavenger Company, September 9, 1985.



**Mitigation to be Considered.** At such time that it becomes necessary, the City could direct a portion of property tax revenues to a fund for school district impactation fees. This would be anticipated upon approval of major family housing projects. These fees only would apply to school facilities, and could not be used for operating expenses. The City currently is considering assisting a private school to purchase Ralph Hawley School. This would increase the school facilities in the City; however, it only would ease the burden on the Emery Unified School District to the degree that students who normally would attend public school in Emeryville would attend this private school instead.

The additional police and fire department personnel and equipment could be financed partially by revenues from new development. The City could utilize the Peace Officers Standards and Training (POST) study which currently is underway to determine present and projected police department service needs. The City also could initiate a study of the Fire Department through the ISO (Insurance Services Organization) for a current fire insurance rating. This study could be used to assure that adequate public protection is provided under existing conditions and as a result of the Specific Plan. All major arteries could have light-locking systems installed to allow efficient emergency response.

The City could pursue funding of some parks and open space projects through agencies such as the State Parks and Recreation Department; bicycle paths and pedestrian overcrossings could be partially funded through programs of the Metropolitan Transportation Commission.

Recycling of solid waste could be encouraged by proper design of the individual projects. For residential projects, each dwelling unit could be provided with space for storing cans, bottles and newspapers. Dumpsters could be centrally located for these items in large residential developments. Retail and office projects could facilitate recycling by providing dumpster space for storage of corrugated cardboard, high-grade office paper, glass, and metal, and by siting buildings to allow easy truck access to dumpsters.

## **H. PUBLIC UTILITIES**

### **Impact Assessment**

**Water Supply.** The existing water supply infrastructure would not be sufficient to accommodate the additional development in the Bayfront. Improvements to the system which would accommodate additional development, including the required fire flows, are proposed in the Specific Plan. Water supply capacity is not known to be a problem.

**Stormwater Drainage.** Localized flooding presently occurs in the vicinity of Christie Avenue during heavy rainstorms. The capacity of the outfall in that area is impaired due to heavy siltation. The Specific Plan proposes improvements to the stormwater drainage system which would alleviate these problems and accommodate additional development.

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<sup>1</sup>Bill McGowan, Associate Civil Engineer, EBMUD, August 6, 1985.

**Wastewater Treatment.** The wastewater treatment plant, which is located south of the project area in Oakland, has a capacity of 120 million gallons per day (mgd). Presently 80 mgd of the capacity is utilized. Additional sewer connections would not affect the capacity of the plant.<sup>1</sup> The lines which carry wastewater to the EBMUD interceptor which runs parallel to I-80 would have to be upgraded, and the Plan identifies provisions to implement this.

The required water supply and wastewater flows expected from the worst-case scenarios are shown in Table III-3. The greatest demand for water and generation of wastewater would occur under the maximum office/housing scenario (Scenario I). In this case, the project could generate up to 1.8 mgd of wastewater, which is approximately 1.5 percent of the plant's capacity.

**Other Utilities.** The project would increase the demand for phone service. Since Pacific Bell has recently completed upgrading of the phone lines under Powell Street to fiber-optic cables, the project would not exceed available telephone line capacity. A small amount of space, approximately 400 square feet, would be needed for an equipment room in order to operate the cable lines.<sup>2</sup> Gas and electricity is discussed in the Energy section of this Chapter (Section I).

### **Mitigation Measures**

**Mitigation Included with Project.** The Specific Plan proposes an assessment district to finance utilities improvements. These include upgrading and replacing of existing sewer, stormwater drainage, and water supply lines, as well as the addition of new lines. This is detailed in the Specific Plan.

An assessment district would be established for construction of all utilities, including the stormwater system, as a condition for development. The stormwater drainage system specified in the Plan calls for new lines and upgrading existing lines, sufficient to accommodate the new development. Details of the proposed improvements can be found in the Plan.

**Mitigation to Be Considered.** EBMUD is currently developing water conservation guidelines that will be applicable to new construction. The guidelines will cover the use of water-saving appliances and devices, and methodology for irrigation that will provide long-term efficient water use, limited use of turf, and, in non-turf areas, the use of inert material or low-water-use plants.<sup>3</sup> New development must comply with these guidelines. The City could take an active role in pursuing these measures.

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<sup>1</sup> Joe Damas, EBMUD, August 6, 1985.

<sup>2</sup> Len Matson, Engineer, Pacific Bell, August 28, 1985.

<sup>3</sup> Richard L. Kolm, EBMUD, correspondence dated August 12, 1985 to John Anderson, Planning and Zoning Administrator, City of Emeryville. Subject: Bayfront Specific Plan, Notice of Preparation of a Draft Environmental Impact Report.

**Table III-3: Water and Wastewater Flows**

|                                                       | Scenario 1:<br>Maximum Office<br>Minimum Retail<br>(Maximum) Housing <sup>1</sup> | Scenario 2:<br>Maximum Housing<br>Minimum Retail<br>(Maximum) Office <sup>2</sup> | Scenario 3:<br>Maximum Retail<br>Minimum Housing<br>(Maximum) Office <sup>3</sup> |
|-------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <u>Water</u>                                          |                                                                                   |                                                                                   |                                                                                   |
| Residential<br>(325 gallons/day/unit)                 | 479.1                                                                             | 1,394.9                                                                           | 125.1                                                                             |
| Non-Residential Minimum<br>(75 gallons/day/employee)  | 739.5                                                                             | 312.8                                                                             | 862.4                                                                             |
| Non-Residential Maximum<br>(100 gallons/day/employee) | <u>1,604.4</u>                                                                    | <u>671.3</u>                                                                      | <u>1,812.4</u>                                                                    |
| Total Minimum<br>(gallons/day x 1,000)                | 1,218.6                                                                           | 1,707.7                                                                           | 987.5                                                                             |
| Total Maximum<br>(gallons/day x 1,000)                | 2,083.5                                                                           | 2,066.2                                                                           | 1,937.5                                                                           |
| <u>Wastewater</u>                                     |                                                                                   |                                                                                   |                                                                                   |
| Residential<br>(90% of water flow)                    | 431.2                                                                             | 1,255.4                                                                           | 112.6                                                                             |
| Non-Residential Minimum<br>(80% of water flow)        | 591.6                                                                             | 250.2                                                                             | 689.9                                                                             |
| Non-Residential Maximum<br>(80% of water flow)        | <u>1,283.5</u>                                                                    | <u>537.0</u>                                                                      | <u>1,449.9</u>                                                                    |
| Total Minimum<br>(gallons/day x 1,000)                | 1,022.8                                                                           | 1,505.6                                                                           | 802.5                                                                             |
| Total Maximum<br>(gallons/day x 1,000)                | 1,714.7                                                                           | 1,792.4                                                                           | 1,562.5                                                                           |

<sup>1</sup> Assumes maximum office, minimum retail, and the maximum amount of housing allowed in the remainder.

<sup>2</sup> Assumes maximum housing, minimum retail, and the maximum amount of offices allowed in the remainder.

<sup>3</sup> Assumes maximum retail, minimum housing, and the maximum amount of offices allowed in the remainder.

Sources: City of Emeryville, Emeryville Redevelopment Agency, Final Environmental Impact Report on the Amended Redevelopment Plan for the Emeryville Redevelopment Agency of the City of Emeryville, August 1983; SCA.



**Mitigation to be Performed by Others.** EBMUD administers fees for some utilities hookups, and new developments would have to pay according to EBMUD's fee structure. Pacific Bell may negotiate with individual developers and the City of Emeryville for the provision of space for an equipment room.

## **I. ENERGY**

Energy consumption which results from the Specific Plan would primarily result from increased vehicle use, and secondarily from energy required for residential and non-residential purposes, such as heating water, heating and cooling buildings and running appliances. As shown on Table III-4, vehicle fuel consumption is based on average fuel efficiency for automobiles and an average trip length of 7 miles. It is estimated that vehicles will become more fuel-efficient in the future, which will lower the energy impacts of increased vehicle use.

Energy usage could be greatest under a scenario which maximizes retail and office use. As shown in Table III-5, these uses could theoretically consume up to 866,000 kBTU per year. This could only occur, however, if all parcels developed up to the bonus FAR and all office uses implemented TSM programs. It is unlikely that this level of development would actually result from the Specific Plan. The new uses could also significantly reduce current energy consumption, since manufacturing operations such as Judson Steel are major energy consumers.<sup>1</sup> Pacific Gas & Electric Company can meet the demand created by new development.<sup>2</sup>

### **Mitigation Measures**

**Mitigation Included with Project.** The Plan encourages use of public transit by providing for future transit stops and permitting densities sufficient to support a transit system. The HOV lane would be constructed to allow bus access to the northern portion of the Bayfront. The Plan allows floor area bonuses when transit enhancement programs, such as operation of local shuttle buses or transit subsidies, are enacted. These programs could indirectly encourage greater use of public transit.

The Plan would provide a separate bicycle path along Bay Street, and all pedestrian and automobile circulation routes would be designed to accommodate bicyclists. These provisions would decrease dependency on the private vehicle as a mode of transportation.

**Mitigation to be Considered.** Developers could provide parking for vanpools and bicycles, or park-and-ride access near the HOV lane. Individual projects could be designed to incorporate both passive and active energy-conserving techniques. This can incorporate both site design and building construction measures. Buildings which

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<sup>1</sup>City of Emeryville, Final Environmental Impact Report on the Amended Redevelopment Plan for the Redevelopment Agency of the City of Emeryville, August 1983, p. 115.

<sup>2</sup>Ibid.

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**Table III-4: Motor Vehicle Fuel Consumption**

|                                         | <u>1985</u>        | <u>1990</u>        | <u>2005</u>         |
|-----------------------------------------|--------------------|--------------------|---------------------|
| Daily Number of Trips                   | 7,526 <sup>1</sup> | 5,638 <sup>2</sup> | 11,275 <sup>3</sup> |
| Average Trip Length, miles (one-way)    | 7                  | 7                  | 7                   |
| Fuel Efficiency, miles per gallon       | 17.5 <sup>4</sup>  | 27.5 <sup>5</sup>  | 40.0 <sup>6</sup>   |
| Total Fuel Consumption, gallons per day | 3,010              | 1,435              | 1,973               |

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<sup>1</sup>Source: Final EIR on the Redevelopment Plan, August 1983.

<sup>2</sup>Reflects 50% build-out (actual rate of development depends on market conditions).

<sup>3</sup>Reflects 100% build-out (actual rate of development depends on market conditions).

<sup>4</sup>1980 estimate.

<sup>5</sup>EPA National Standard for 1990.

<sup>6</sup>California Energy Commission Projection of a Market-Induced Standard.

Source: City of Emeryville, Emeryville Redevelopment Agency, Final Environmental Impact Report on the Amended Redevelopment Plan for the Emeryville Redevelopment Agency of the City of Emeryville, August 1983.

Table III-5: Energy Consumption

New Dwelling Unit Use Factors:<sup>1</sup>

Space conditioning average: 20 kBTU/sf/year  
 Water heating average: 12,300 kBTU/year (multi-family)  
 Average unit size: 1,200 sf/unit  
 Average total gas useage/unit: 36,300 KBTU/yr.

Non-Residential User Factors:<sup>2</sup>

Maximum allowable/year--office: 130 kBTU/sf (gross)/year  
 Maximum allowable/year--retail: 180 kBTU/sf (gross)/year

|                                                           | <u>Scenario 1:</u>                   | <u>Scenario 2:</u>                  | <u>Scenario 3:</u>                  |
|-----------------------------------------------------------|--------------------------------------|-------------------------------------|-------------------------------------|
|                                                           | Maximum Office                       | Maximum Housing                     | Maximum Retail                      |
|                                                           | Minimum Retail                       | Minimum Retail                      | Minimum Housing                     |
|                                                           | <u>(Maximum) Housing<sup>3</sup></u> | <u>(Maximum) Office<sup>4</sup></u> | <u>(Maximum) Office<sup>5</sup></u> |
| Energy Use at Build-Out<br>(kBTU/year x 1,000,000):       |                                      |                                     |                                     |
| Office                                                    | 371.3                                | 149.4                               | 383.3                               |
| Office w/TSM                                              | 612.5                                | 248.6                               | 641.7                               |
| Retail                                                    | 42.8                                 | 42.8                                | 210.4                               |
| Residential                                               | 53.5                                 | 155.8                               | 14.0                                |
| Total Energy Use at Build-Out<br>(kBTU/year x 1,000,000): |                                      |                                     |                                     |
| without TSM                                               | 467.6                                | 348.0                               | 607.7                               |
| with TSM                                                  | 708.7                                | 447.1                               | 866.1                               |

<sup>1</sup>California Energy Commission, Energy Conservation Standards for New Residential Buildings, August 1981.

<sup>2</sup>California Energy Commission, Conservation Division Regulations Establishing Energy Conservation Standards for New Nonresidential Buildings, February 1980.

<sup>3</sup>Assumes maximum office, minimum retail, and the maximum amount of housing allowed in the remainder.

<sup>4</sup>Assumes maximum housing, minimum retail, and the maximum amount of offices allowed in the remainder.

<sup>5</sup>Assumes maximum retail, minimum housing, and the maximum amount of offices allowed in the remainder.

Source: City of Emeryville, Emeryville Redevelopment Agency, Final Environmental Impact Report on the Amended Redevelopment Plan for the Emeryville Redevelopment Agency of the City of Emeryville, August 1983.



remain in their existing uses could be retrofitted to incorporate energy conservation. Appendix E describes some energy conservation techniques. The City could adopt an energy conservation ordinance, which could provide incentives for energy saving construction, site design and transportation measures, and disincentives for projects which waste energy.

## **J. GEOLOGY**

### **Impact Assessment**

Development of the Bayfront could expose residents and employees to geotechnical hazards in terms of potential for ground shaking, liquefaction, and structural settlement. The area could be subject to violent ground shaking in the event of a major earthquake. Although the likelihood of such an event occurring is low, the damage could be significant.

**Flood Hazards.** Some residents and employees in the Bayfront could be exposed to the risk of flooding, should an earthquake damage the dam at Lake Temescal. A tsunami could also expose people to flooding hazards. The potential for these events is low.<sup>1</sup>

### **Mitigation Measures**

**Mitigation Included with Project.** All structures must be designed in accordance to the Uniform Building Code, which would minimize the risk of damage due to geotechnical hazards.

In accordance with standards presently adopted by the City, comprehensive soil investigations would be required for review of development proposals. A soils study would assure that the project would not expose its occupants to any extraordinary risks.

**Mitigation to be Considered.** The City and Alameda County would activate the Emergency Services network during any event which posed a threat to human safety. The City should periodically coordinate with the County and State Offices of Emergency Services to assure that the appropriate response would be made by all agencies and City departments during a natural disaster. The City should consider informing landowners and residents of existing risks where they are known, and instituting a program which distributes information to help residents prepare for the possibility of a natural disaster.

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<sup>1</sup> See ABAG, a Guide to ABAG's Earthquake Hazard Mapping Capability, March 1980, and the following Working Papers:

- Working Paper No. 1, Faults and Ground Shaking Intensity.
- Working Paper No. 3, Damage and Ground Shaking Intensity.
- Working Paper No. 4, Liquefaction Potential Mapping.
- Working Paper No. 6, Tsunami Inundation Areas.
- Working Paper No. 7, Dam Inundation Areas.

## K. HAZARDOUS SUBSTANCES

### Impact Assessment

**Contaminated Sites.** The Department of Health Services (DOHS) has determined that use of the Marketplace property should be restricted due to soils contamination.<sup>1</sup> Single family dwellings or other residential units which could allow contact with existing soils would not be allowed because of the risk of ingestion of hazardous substances through the soils or through edible plants grown in the soil.

Commercial uses would not be restricted. The Bayfront Specific Plan permits commercial and high density residential use on this site. Landscaping on a commercial site may require removal of existing soils and replacement with imported soil.

The Garrett Truck Lines Property, which is currently being proposed for development, shows evidence of contamination from a previous paint products operation. The Environmental Impact Report for this project indicated that development of the site would not expose the deposits of heavy metals or hydrocarbon materials. It also indicated that the fill material placed on the site would seal the waste materials from the surface.<sup>2</sup>

In the past, several industries located in the Bayfront may have used hazardous substances. Neither the industries nor the substances they used are well-documented. Future uses of the Bayfront must be guided by restrictions which would be posed by the possibility of contamination.

This could pose health risks for future residents and visitors to the Bayfront, particularly in places where contact with soils or vegetation could be expected, such as in public parks and open space. The water of Temescal Creek may contain hazardous materials, which could pose health risks when the creek is restored to an open waterway. The particular problems of Temescal Creek are discussed in the Water Quality section of this Chapter (Section N).

**Use, Disposal, and Accidents.** Some existing industrial operations in the Bayfront currently use hazardous materials, and may continue to do so as the area develops. The Plan permits some non-impact industrial activities. These activities could employ hazardous substances in their operations. Overall, however, the use of hazardous substances in the Bayfront could be expected to decrease as a result of the Specific Plan. An accident on the Southern Pacific Railroad or at the wastewater treatment plant in Oakland could expose employees and residents of the Bayfront to additional hazards.

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<sup>1</sup>Paul Williams, Waste Management Specialist, Department of Health Services, August 6 and 8, 1985.

<sup>2</sup>Earth Metrics Incorporated, Draft Environmental Impact Report for the proposed Bay Center Development in the Redevelopment Project Area of the City of Emeryville, July 1985, p. 3.5-1.

None of these possibilities are expected to generate significant negative impacts, assuming that the fire department continues their annual inspections, and that the City maintains an adequate response plan for potential accidents. This would involve coordination with local, regional, state, and federal agencies.

### **Mitigation Measures**

**Mitigation Included with Project.** Environmental Performance Standards contained within the Plan require all uses which produce, handle, transport, store, or dispose of any hazardous materials to comply with all federal, state, and local statutes, codes, rules, ordinances and regulations.

**Mitigation to be Considered.** The City should complete a comprehensive survey of all present and historic land uses in the Bayfront, to determine whether hazardous materials could have been present on each site. The City should consider modifying its existing requirement for soils tests on proposed projects to include a chemical analysis, particularly on sites where the land use survey indicated that previous activities could have employed hazardous materials. Detailed chemical analysis should be required for areas of proposed open space or landscaping, and appropriate measures to assure public safety, such as removal and replacement of soils if necessary, should be applied at that time in accordance with the results of the chemical analysis. Project-level supplemental EIRs should include a detailed assessment of these conditions.

The Emeryville Fire Department should continue to conduct annual inspections of businesses to determine what hazardous materials are currently being used in the Bayfront. The City should maintain effective emergency response plans, and coordinate these with all appropriate agencies. This may require an additional staff member for hazardous materials inspection.<sup>1</sup>

When the Emeryville Marketplace develops, the City should require the contractor to work closely with DOHS and to report any unusual soils conditions or buried containers immediately. Any use which would permit contact with existing soils should be prohibited; or else removal of existing soils and replacement should be required, particularly for proposed residential projects. This requirement should be applied to any property which is later discovered to contain evidence of hazardous materials and/or soils.

Development of the Garrett Truck Terminal property should occur in coordination with DOHS, to assure compliance with any state regulations. In addition, any unusual soil conditions or buried containers discovered during construction should be reported to DOHS.

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<sup>1</sup>Ray Vittori, Emeryville Fire Chief, memo to John Anderson, Emeryville Redevelopment Agency, November 1, 1985. Subject: Draft EIR, Bayfront Plan, October 1985.



## L. NOISE

### Impact Assessment

The project site would be subject to noise from local traffic, and from traffic on Interstate 80. Rail operations would affect the eastern portion of the site. Adverse noise impacts would occur where Ldn levels exceed those specified in Table III-6.

Noise would be generated by existing industrial uses in the Bayfront and east of the railroad tracks in Emeryville, but the greatest source of noise would be freeway traffic and rail operations.

The future noise exposure contours shown in Figure III-3 are based on traffic information for future conditions in the Bayfront. The cumulative effects of growth Citywide were considered in the traffic analysis. Figure III-3 also shows the noise exposure along the Southern Pacific railroad tracks through the study area. These contours are based on the assumption that the proposed merger between the Southern Pacific Transportation Company and the Atchison Topeka & Santa Fe railroad takes place. Under these conditions, it is anticipated that there would be about 31 train operations per day on these tracks, of which approximately 50 percent would occur between the hours of 10:00 p.m. and 7:00 a.m. Currently there are approximately 12 operations per day; existing sound levels are approximately 4 decibels lower than shown on the map. For purposes of clarity, the railroad train noise exposure has not been combined with the surface traffic noise exposure so that the differences between these two unique types of noise sources can be shown.

Table III-6 summarizes the California Office of Noise Control guidelines for community noise compatibility. In terms of the interpretation of this table, the Office of Noise Control offers the following explanation:

Where a land use is denoted as "clearly acceptable" for the given Ldn noise environment, this implies that the highest noise level in that band is the maximum desirable for existing or conventional construction which does not incorporate any special acoustic treatment. In general, evaluation of land use which falls into noise environments described as "normally acceptable" or "normally unacceptable" should include consideration of the amount of exterior to interior noise reduction provided by the structure and the anticipated amount of time which will normally be spent outside the structure.<sup>1</sup>

The guidelines provided by the table are intended to be general, and some communities have varied the requirements somewhat. Correction factors are recommended to account for some of the factors which cause the noise to be more or less acceptable in certain environments. These are shown on Table III-7. These factors account for seasonal variations (not applicable to Emeryville), existing outdoor levels (i.e., existing freeway and rail noise), and general attitudes toward the noise. For the Emeryville Bayfront, this indicates that the acceptable outdoor noise level as shown on Table III-6 could be increased by approximately 10 dB.

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<sup>1</sup>Office of Noise Control, California Department of Health, and Office of Planning & Research, Guidelines for the Preparation and Content of Noise Elements of the General Plan, February 1976, p. 22.

Table III-6:  
COMPATIBILITY STANDARDS FOR COMMUNITY NOISE ENVIRONMENTS  
(Developed by the California Department of Health, Office of Noise Control)

| LAND USE CATEGORY                                                   | COMMUNITY NOISE EXPOSURE<br>Ldn OR CNEL, dB |    |    |    |    |    | INTERPRETATION                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------|---------------------------------------------|----|----|----|----|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                     | 55                                          | 60 | 65 | 70 | 75 | 80 |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| RESIDENTIAL – LOW DENSITY<br>SINGLE FAMILY, DUPLEX,<br>MOBILE HOMES |                                             |    |    |    |    |    | <br><b>NORMALLY ACCEPTABLE</b><br>Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.                                                                                                                                        |
| RESIDENTIAL – MULTI. FAMILY                                         |                                             |    |    |    |    |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| TRANSIENT LODGING –<br>MOTELS, HOTELS                               |                                             |    |    |    |    |    | <br><b>CONDITIONALLY ACCEPTABLE</b><br>New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. |
| SCHOOLS, LIBRARIES,<br>CHURCHES, HOSPITALS,<br>NURSING HOMES        |                                             |    |    |    |    |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| AUDITORIUMS, CONCERT<br>HALLS, AMPHITHEATRES                        |                                             |    |    |    |    |    | <br><b>NORMALLY UNACCEPTABLE</b><br>New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.                                                                        |
| SPORTS ARENA, OUTDOOR<br>SPECTATOR SPORTS                           |                                             |    |    |    |    |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| PLAYGROUNDS,<br>NEIGHBORHOOD PARKS                                  |                                             |    |    |    |    |    | <br><b>CLEARLY UNACCEPTABLE</b><br>New construction or development should generally not be undertaken.                                                                                                                                                                                                                                                        |
| GOLF COURSES, RIDING<br>STABLES, WATER RECREATION,<br>CEMETERIES    |                                             |    |    |    |    |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| OFFICE BUILDINGS, BUSINESS<br>COMMERCIAL AND<br>PROFESSIONAL        |                                             |    |    |    |    |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| INDUSTRIAL, MANUFACTURING<br>UTILITIES, AGRICULTURE                 |                                             |    |    |    |    |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

#### CONSIDERATIONS IN DETERMINATION OF NOISE-COMPATIBLE LAND USE

##### A. NORMALIZED NOISE EXPOSURE INFORMATION DESIRED

Where sufficient data exists, evaluate land use suitability with respect to a "normalized" value of CNEL or Ldn.

##### B. NOISE SOURCE CHARACTERISTICS

The land use-noise compatibility recommendations should be viewed in relation to the specific source of the noise. For example, aircraft and railroad noise is normally made up of higher single noise events than auto traffic but occurs less frequently. Therefore, different sources yielding the same composite noise exposure do not necessarily create the same noise environment. The State Aeronautics Act uses 65 dB CNEL as the criterion which airports must eventually meet to protect existing residential communities from unacceptable exposure to aircraft noise. In order to facilitate the purposes of the Act, one of which is to encourage land uses compatible with the 65 dB CNEL criterion wherever possible, and in order to facilitate the ability of airports to comply with the Act, residential uses located in Com-

munity Noise Exposure Areas greater than 65 dB should be discouraged and considered located within normally unacceptable areas.

##### C. SUITABLE INTERIOR ENVIRONMENTS

One objective of locating residential units relative to a known noise source is to maintain a suitable interior noise environment at no greater than 45 dB CNEL of Ldn. This requirement, coupled with the measured or calculated noise reduction performance of the type of structure under consideration, should govern the minimum acceptable distance to a noise source.

##### D. ACCEPTABLE OUTDOOR ENVIRONMENTS

Another consideration, which in some communities is an overriding factor, is the desire for an acceptable outdoor noise environment. When this is the case, more restrictive standards for land use compatibility, typically below the maximum considered "normally acceptable" for that land use category, may be appropriate.



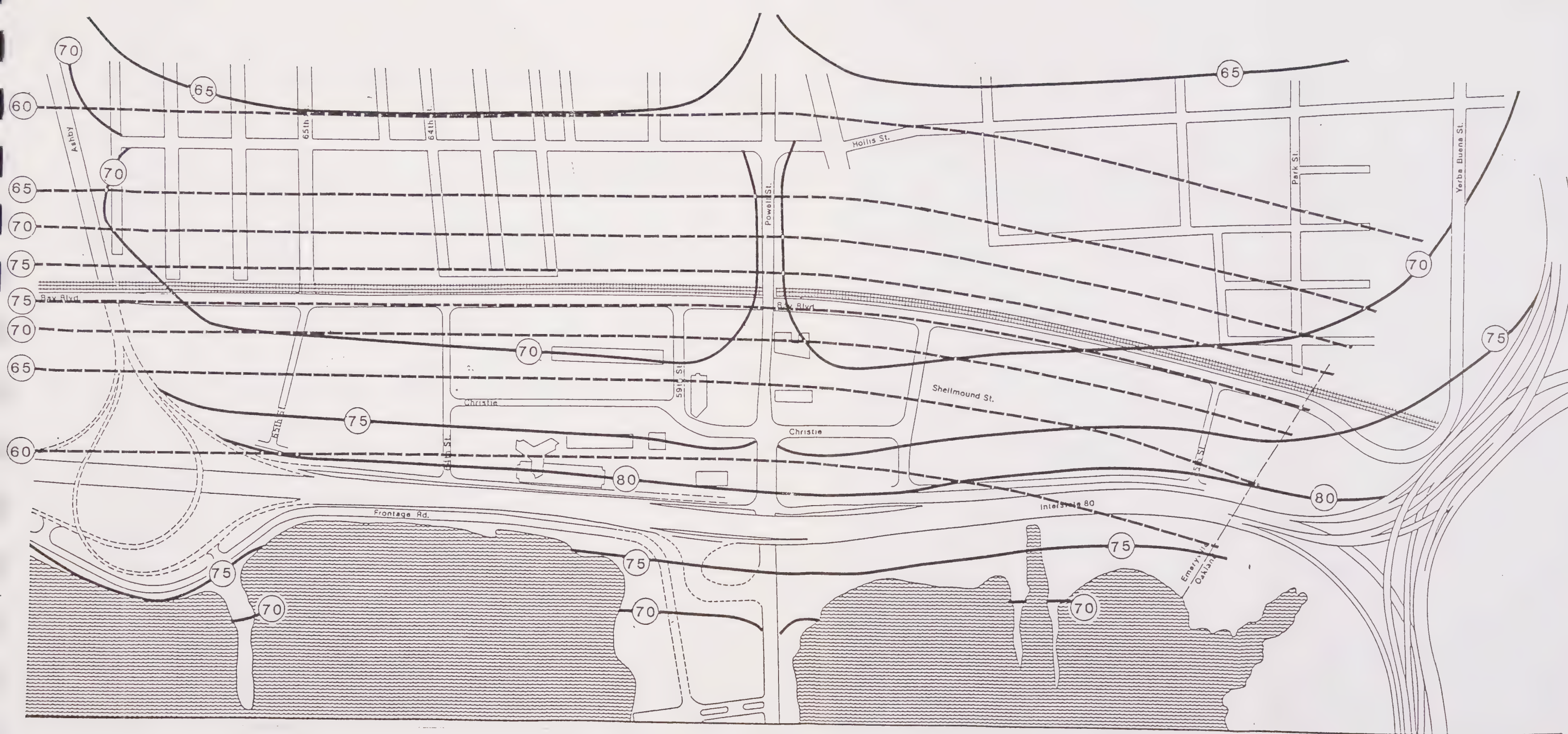


Figure III-3  
FUTURE NOISE CONTOURS

- (70) DAY/NIGHT NOISE LEVELS IN DECIBELS ( $L_{dn}$ )
- RAILROAD  $L_{dn}$
- SURFACE ROAD  $L_{dn}$

# EMERYVILLE SPECIFIC PLAN

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**Table III-7: Corrections to be Added to the Measured CNEL to Obtain Normal CNEL**

| <u>Type of Correction</u>                                | <u>Description</u>                                                                                                                                                                                                                                                                                                           | <u>Amount of Correction to be Added to Measured CNEL in dB</u> |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Seasonal Correction                                      | Summer (or year-round operation).                                                                                                                                                                                                                                                                                            | 0                                                              |
|                                                          | Winter only (or windows always closed).                                                                                                                                                                                                                                                                                      | -5                                                             |
| Correction for Outdoor Residual Noise Level              | Quiet suburban or rural community (remote from large cities and from industrial activity and trucking).                                                                                                                                                                                                                      | +10                                                            |
|                                                          | Quiet suburban or rural community (not located near industrial activity).                                                                                                                                                                                                                                                    | +5                                                             |
|                                                          | Urban residential community (not immediately adjacent to heavily traveled roads and industrial areas).                                                                                                                                                                                                                       | 0                                                              |
|                                                          | Noisy urban residential community (near relatively busy roads or industrial areas).                                                                                                                                                                                                                                          | -5                                                             |
|                                                          | Very noisy urban residential community.                                                                                                                                                                                                                                                                                      | -10                                                            |
| Correction for Previous Exposure and Community Attitudes | No prior experience with the intruding noise.                                                                                                                                                                                                                                                                                | +5                                                             |
|                                                          | Community has had some previous exposure to intruding noise, but little effort is being made to control the noise. This correction may also be applied in a situation where the community has not been exposed to the noise previously, but the people are aware that bona fide efforts are being made to control the noise. | 0                                                              |
|                                                          | Community has had considerable previous exposure to the intruding noise, and the noise maker's relations with the community are good.                                                                                                                                                                                        | -5                                                             |
|                                                          | Community aware that operation causing noise is very necessary, and it will not continue indefinitely. This correction can be applied for an operation of limited duration and under emergency circumstances.                                                                                                                | -10                                                            |
| Pure Tone or Impulse                                     | No pure tone or impulsive character.                                                                                                                                                                                                                                                                                         | 0                                                              |
|                                                          | Pure tone or impulsive character present.                                                                                                                                                                                                                                                                                    | +5                                                             |

Source: Office of Noise Control, California Department of Health, and Office of Planning & Research, Guidelines for the Preparation and Content of Noise Elements of the General Plan, February 1976.

Table III-6 notes that indoor residential environments should not exceed 45 dB CNEL or Ldn. The typical range of noise reduction provided by residential dwellings is 12-18 dB with windows partially open. Outdoor noise levels of greater than 60 dB may still require some noise attenuation.

Some land uses proposed in the Specific Plan would be subjected to noise levels which are greater than these recommended by the Office of Noise Control. The residential areas in the eastern Bayfront would be exposed to noise levels of 65-75 dBA from rail activities, and some areas would be exposed to traffic-generated noise at these same levels. Standards for hotels are similar to those for residences. For commercial office buildings, noise insulation would be required where noise levels exceed 70 dBA.

Activities and land uses as allowed by the Plan are not expected to generate high noise levels, except locally during construction.

### **Mitigation Measures**

**Mitigation Included with Project.** Environmental Performance Standards identified in the Plan would limit allowable noise levels generated from a project site in order to protect adjacent sites. Noise generated from uses within the site would thus not exceed standards.

Siting standards described in the Specific Plan would result in reductions of noise over predicted levels for some residential uses. Buildings located adjacent to the freeway would absorb some of the noise which would otherwise reach the residences.

**Mitigation to be Considered.** Detailed noise analysis must be performed for residential projects which would be located in areas where noise levels would exceed 65 DBA (Ldn), and for office and commercial projects in areas where noise levels would exceed 70 DBA. Appropriate design measures could be applied at that time. These could include site design and landscaping to reduce actual and perceived noise before it reaches buildings; architectural design which locates the more noise-sensitive uses of a building farther from the noise source; and acoustical design in structures. Appendix F describes potential noise reduction measures.

When the HOV lane for Interstate 80 is constructed, it will be possible to include noise measures in the construction. This would have to be coordinated between the City and Caltrans. Some of these measures are noted in Appendix F.

The City should adopt a noise ordinance to control and abate noise. The California Department of Health's Office of Noise Control has developed a model community noise ordinance.<sup>1</sup> This ordinance describes regulations, standard noise limits, and enforcement procedures.

The City should consider disallowing residential development in the mixed-use areas immediately adjacent to the freeway, unless a noise study concludes that noise levels

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<sup>1</sup>California Department of Health, Office of Noise Control, Model Community Noise Control Ordinance, April 1977.



from the freeway can be reduced to acceptable levels by site design and noise insulation.

## M. AIR QUALITY

### Impact Assessment

**Direct Impacts.** Direct sources of air pollutants are vents and stacks that release gases or particles directly to the atmosphere. Any land uses that contain such sources (restaurants or dry cleaning operations, for example) would be subject to the rules and regulations of the Bay Area Air Quality Management District. District regulations require all sources to obtain permits prior to construction and prior to operation. As part of the permit process, an analysis is required, demonstrating that a given source meets the District's emission limitations and control requirements and would not result in violations of any ambient air quality standard. Land uses which are allowed by the Specific Plan are not expected to generate major quantities of air pollutants.

**Indirect Impacts.** Traffic generated by the proposed land uses would have an indirect impact on both local and regional air quality. The local effect would be increased carbon monoxide levels along roadways used by project traffic. Concentrations of this pollutant have been predicted at five intersections under worst-case assumptions for traffic and meteorology with the proposed land uses. Because these intersections are a focus of traffic and congestion, these concentrations should represent the highest occurring in the vicinity. The methods and assumptions used in deriving these predictions are explained in Appendix B.

Table III-8 shows the results of the intersection analysis for the peak 1- and 8-hour traffic periods. The 1-hour values are to be compared to the federal 1-hour standard of 35 ppm (parts per million) and the state standard of 20 ppm. The 8-hour values are to be compared to the state and federal standards of 9 ppm. The analysis assumes build-out by the year 2000, and assumes that all recommended roadway and intersection improvements also are constructed by that time. Table III-8 shows potential local violations of the 8-hour standard near the Powell Street interchange with Interstate 80.

The regional effects of the proposed land use modifications would be related to the vehicle miles traveled (VMT) associated with project traffic. VMT has been predicted for the proposed land use modifications using a calculated average trip length of 6.2 miles. The project is estimated to generate a regional VMT of 161,000 and result in the additional daily regional emission of:

- 4,400 lbs/day of carbon monoxide
- 410 lbs/day of hydrocarbons
- 459 lbs/day of nitrogen dioxide
- 15 lbs/day of sulfur dioxide
- 831 lbs/day of particulates

Of the pollutants shown above, hydrocarbons and oxides of nitrogen (ozone precursors) are the most significant due to the persistent ozone problem in the Bay Area. Due to travel patterns and regional wind patterns, project emissions would primarily affect areas east and south of the site.

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**Table III-8: Predicted Worst-Case Carbon Monoxide Concentrations (in ppm)**

| <u>Intersection</u>                  | <u>Roadside Concentration (in ppm)</u> |                       |
|--------------------------------------|----------------------------------------|-----------------------|
|                                      | <u>1-Hour Average</u>                  | <u>8-Hour Average</u> |
| Christie/Powell                      | 11.7                                   | 8.0                   |
| Powell/I-80 northbound on-/off-ramps | 17.3                                   | 11.9*                 |
| Bay/65th                             | 8.5                                    | 5.8                   |
| Ashby/Bay                            | 12.4                                   | 8.5                   |
| Ashby/I-80 northbound on-/off-ramps  | 12.2                                   | 8.4                   |
| <b>Federal Standard</b>              | <b>35.0</b>                            | <b>9.0</b>            |
| <b>State Standard</b>                | <b>20.0</b>                            | <b>9.0</b>            |

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\*Exceeds state and federal standards.

Source: Donald Ballanti

The above additional emissions would result in a degradation of regional air quality. However, because they would occur over a large geographical region, no measurable change in air quality would be expected from the project.

## **Mitigation Measures**

**Mitigation Included with Project.** Uses which locate in the Bayfront would be required to comply with standards regarding dust and particulate matter which are identified in the Plan. The circulation element of the Specific Plan contains measures which encourage the use of public transit, and bicycle and pedestrian circulation, including limits on the total number of parking spaces, transit stops, and bicycle/pedestrian routes and bridges. The Plan requires that recommended roadway and intersection improvements be made prior to development at higher densities, assuring that carbon monoxide levels do not exceed projections.

Comprehensive TSMs are encouraged by providing development bonuses. TSMs must be provided for development densities which exceed the standard floor area ratios. Development of TSMs would not result in a direct reduction of vehicle emissions, but their implementation may indirectly reduce the number of vehicle trips. Transit enhancement programs, for example, may serve more people than just those who work in the immediate project vicinity. Additional information on TSM programs is contained in Appendix D.

The land use element promotes a pattern of mixed commercial, office, retail, and residential land uses, which would tend to reduce vehicle travel by locating residences near employment and shopping areas.

**Mitigation to be Considered.** Public transit systems could be expanded to accommodate additional patrons and trips, and to further reduce vehicle use. The City could adopt standards requiring individual projects or buildings to contain bicycle storage facilities and/or locker rooms for bicycle commuters to shower and change. Intersections could be reconfigured to improve levels of service, although the cost of such a measure could be prohibitive.

Transit amenities and incentives could be provided. These could include construction of attractive and convenient bus stops, or appointment of TSM coordinators within companies to assemble and provide information regarding transportation alternatives. As individual projects develop, an estimate of employee salaries could be matched to projected housing costs in order to determine appropriate housing types to facilitate shortening commutes by locating jobs and housing together.

## **N. WATER QUALITY**

### **Impact Assessment**

The Specific Plan would probably have a positive effect on water quality. Although no quantitative measurements are available of water pollutants in Temescal Creek or at the Creek's outlet to the bay, it is likely that some pollutants are currently reaching these waters from stormwater runoff. The Plan permits primarily non-industrial land uses; stormwater runoff would likely contain only oil from surface streets and



fertilizer used on turf in landscaped areas. The number of point sources of pollution would be reduced as industrial uses leave the Bayfront.

The Specific Plan recommends alterations to Temescal Creek which would improve its physical appearance and indirectly encourage some human contact with the water. The quality of the water is not presently quantified; although the number of nonpoint sources of pollution would be reduced, it is possible that residents could be indirectly exposed to water which is of poor quality.

Groundwater in the area may be of poor quality, due to contamination which is known at some Emeryville sites east of the Bayfront<sup>1</sup>. This is not expected to generate any adverse impacts, since drinking water is not drawn from the ground and since new uses would not exacerbate any existing water quality problems.

Activities within the Bayfront are not expected to be major waste dischargers. There could be some uses, such as gas stations, which contain on-site underground storage of hazardous materials. These could further threaten groundwater supplies if storage tanks are not properly designed.

### **Mitigation Measures**

**Mitigation Included with Project.** All discharges of wastewater would be required to comply with any and all local, state, or federal regulations and codes regarding pollutants or hazardous materials.

**Mitigation to be Considered.** Water from Temescal Creek should be analyzed as plans are made to upgrade the creek. Studies may have been conducted by personnel at UC Berkeley's Richmond Field Station. These studies could be checked as an initial basis for future analysis. Detailed analysis should be conducted when alterations to the creek are proposed. If the water is found to be unhealthful for occasional human contact, the City could work with appropriate agencies such as the East Bay Regional Parks District and the Alameda County Flood Control and Water Conservation District to develop measures which would protect public health.

The City could adopt a hazardous materials ordinance which includes provisions for underground storage tanks.

## **O. PLANT AND ANIMAL COMMUNITIES**

### **Impact Assessment**

Since no known wildlife or important plant communities are known to exist in the Bayfront, no negative impacts are expected. The possibility exists that a rare or endangered species which is not known to exist in the area may be discovered at some point in the future.

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<sup>1</sup>These sites include Westinghouse and ITT Grinnell, north of Powell Street; PG&E and Electro-Coatings, south of Powell Street.

Some species of water fowl may begin to inhabit the Bayfront when Temescal Creek is upgraded. It is unlikely that these would include any endangered species known to inhabit the Emeryville Crescent, an important salt marsh and wildlife habitat. The clapper rail and least tern, both endangered species known to inhabit the Emeryville Crescent, require high-quality salt marsh habitat, which would not be provided in the Bayfront. If Temescal Creek is subject to tidal action or contains fish after its reconfiguration, there is a slight possibility that the least tern would forage in the vicinity.<sup>1</sup> This is also unlikely, since the Bayfront is across the freeway from the salt marsh.

## **Mitigation Measures**

**Mitigation to be Considered.** If a rare or endangered plant or animal species were to be discovered prior to or during construction activities, biological assessments can be performed at that time. If the reconfiguration of Temescal Creek includes any possibility of tidal action, a wildlife biologist should be retained to assess the potential impact, and the U.S. Fish and Wildlife Service should be notified of the results.

## **P. CULTURAL RESOURCES**

### **Impact Assessment**

CEQA guidelines specifically require an assessment of the potential impact a project could have on archaeological resources. The project might disturb archaeological remnants in the form of Indian shellmounds. Although it is likely that these sites have already been destroyed, no studies have been conducted to confirm this. At one time, Emeryville contained one of the largest known shellmounds. The Emeryville Shellmound is listed in the California Inventory of Historic Resources (1976) and is included as a landmark in California Historical Landmarks (1982). There were several other shellmounds in the vicinity of this shellmound.<sup>2</sup> The extent of the potential impact resulting from the Specific Plan cannot be accurately assessed without additional information.

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<sup>1</sup>Peter Sorenson, Wildlife Biologist, U.S. Fish and Wildlife Service, Endangered Species Office, October 11, 1985.

<sup>2</sup>Christian Gerike, Northwest Information Center, Department of Anthropology, Sonoma State University, correspondence to Janet Parrish, Sedway Cooke Associates, dated December 2, 1984. Subject: City of Emeryville Archaeological Inventory.

## Mitigation Measures

**Mitigation to be Considered.** Because the Bayfront at one time contained archaeological resources of considerable significance which are not definitively documented as being destroyed, the City is compelled under CEQA to make an effort to determine the existence, extent, and significance of the potential remaining resources.<sup>1</sup> The City should retain a qualified archaeologist to perform a more detailed and geographically specific records search of the Emeryville Bayfront. Physical investigation, such as auguring, should be required of sites that are identified as potentially containing archaeologically significant remains. Future discoveries of unusual buried items during construction and site development activities should be reported to a qualified archaeologist, to ensure that potential archaeological sites are not further destroyed.

The requirement for auguring and archaeological investigation could be included as part of the existing soils test required prior to issuance of a permit. The requirement could be applied Citywide or only to those areas which have been noted in historical records as containing archaeological resources. If no resources are found and it is determined that development would not destroy any potential resources, development can take place without any additional requirements. If evidence of resources is found, further investigation must determine the significance of that resource. Additional measures could be applied at that time.

Appendix G contains information regarding archaeological resources in terms of CEQA requirements. Generally speaking, an archaeological resource is significant if it is important scientifically or historically. If the resource is important, it can either be preserved, or excavated to retrieve the significant elements. Whatever is determined to be unimportant or insignificant can be destroyed.<sup>2</sup>

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<sup>1</sup> Rob Jackson, State Archaeologist, California Office of Historical Preservation, November 8, 1985.

<sup>2</sup> Ibid.



## IV. SIGNIFICANT LONG-TERM IMPACTS

### A. SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Development of the project area according to the Specific Plan would alter the Emeryville Bayfront from one which contains primarily low-intensity industrial uses to one which would contain highly urban office, commercial, and residential uses. Mitigation measures proposed in this report would reduce the significance of most of these impacts. Nevertheless, several impacts cannot be mitigated if the project is implemented as proposed.

**Change in Community Character.** The project would alter existing land uses and permit development which is more intense than that which presently exists. Buildings would be larger and closer together, and there would be a significant increase in traffic. Changes to the Bayfront community would be felt throughout the City of Emeryville and, to some degree, in neighboring communities.

The Plan permits non-conforming uses to remain in the Bayfront unless fire or natural disaster destroys more than 50 percent of the building; however, almost all of the existing uses would eventually be induced by market pressures to leave the Bayfront. While the Plan may hasten this change by the creation of urban amenities to which the office and residential market would respond, such changes are expected to occur regardless of the Plan's adoption. The construction of houses and offices would result in the displacement of many manufacturing and related jobs. The City may propose alternative areas of the city to relocate displaced businesses; nevertheless, the displacement of businesses would have a significant effect on community character, and would directly affect the living patterns of those who now work in Emeryville.

Changes in the Bayfront would not occur immediately; complete development could take 20 years or more. Commercial development in the Bayfront would alter the community character by intensifying land uses and displacing businesses and jobs.

Residential development in the Bayfront would create a separate, distinct neighborhood, and this could alter the demographic composition and distribution within the entire City. This effect has already been observed to some degree with the construction of the Watergate and Pacific Park Plaza residential developments. The Specific Plan could intensify and accelerate this process.

An analysis of the potential changes in the neighborhood demographics and character are beyond the scope of this EIR. The complexity of the issues involved and the numerous variables that must be addressed--such as the actual type and mix of housing, housing cost and affordability, economic and social changes in the City as a whole and in the region, for example--suggest that considerable speculation would be involved in the projection of future neighborhood character.

**Commitment of Resources.** Development of the project site would involve irreversible environmental changes by committing material and energy resources. Much of this impact would primarily occur off-site, as no energy or natural resources are developed within the Bayfront.

Development of the site necessarily involves the use of metals, wood, glass, plastic, and petroleum synthetics as construction materials. The majority of these materials are nonrenewable resources and their use at the project site, however minimal, diminishes their availability. Development of the project site also involves an irreversible and irretrievable commitment of energy resources. Nonrenewable energy sources include oil, natural gas, coal, and uranium. These resources would be consumed not only during construction but also during occupation of the site by residents and employees. This consumption represents direct energy use. Energy used off-site--to manufacture the project's construction materials and produce food for the area's inhabitants, for example--is called indirect consumption and also represents an irreversible and irretrievable use of nonrenewable energy resources.

**Infrastructure Improvements.** The project would involve extension and upgrading of several utility lines, and improvements to the circulation system. These improvements would not occur if properties were to develop lower intensities (base FAR). The improvements, which are required for development at or above the standard FAR, would increase the likelihood that parcels developed at lower intensities would eventually redevelop or add space at the greater intensities (bonus FAR). This could also have cumulative and growth-inducing effects on land in the eastern portion of Emeryville and the neighboring communities of Berkeley and Oakland.

### **Other Potential Impacts**

**Public Services and Facilities.** Development at the highest intensities or development of a significant amount of family housing could result in the need for additional personnel and equipment in the police and fire departments, and could potentially affect the school district. Revenues generated from the project could alleviate the burden on the police and fire departments, and fees imposed upon developers or allocations of property taxes to the school district could be used for school facilities. It may be necessary, in the case of a maximum housing scenario, to open a second school and/or reopen Ralph Hawley School.

### **Relationship Between Local Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity**

Complete development of the project site would occur over a period of years, since non-conforming uses are permitted to remain in the project area. Complete development could take 20 years or more. The major long-term environmental effects of the Plan would occur incrementally as development takes place. These effects are not known to pose any long-term risks to health or safety.

The project area is completely urbanized. Enhancement of long-term productivity would not be affected by the implementation of the project, other than through the commitment of nonrenewable resources. The project could subject a large number of people to environmental hazards, such as those resulting from earthquakes or flooding, although most of these hazards would be avoided by proper building design. If careful attention is not paid to the potential for soils contamination from previous uses, people could also be exposed to hazardous levels of heavy metals, hydrocarbons or other toxic materials. Archaeological resources could be destroyed if care is not taken to assure that any remnants of early Indian activity are preserved. On the other hand, the removal of industrial uses and point sources of pollution, which would also result from the implementation of the Plan, could potentially enhance the environment.

The project is timely, and its deferral would not reduce or eliminate adverse environmental effects. There are several reasons for this. First, virtually no development controls exist in the area, and development is already beginning to occur. This could result in identical or more serious resources losses and environmental degradation than that which could result from the Plan; and it would not reap any of the benefits.

The project site is close to existing highly urbanized areas such as San Francisco, and is adjacent to a major travel corridor. The Caltrans HOV lane will be situated adjacent to the site. This represents an opportunity to increase carpooling and mass transit and decrease use of the private automobile. In addition, if housing were to be added to the Bayfront, the project could potentially decrease commute distances by locating housing and jobs together.

## **B. GROWTH-INDUCING IMPACTS**

Development of the project site could induce growth in the project vicinity. Development up to the maximum permitted intensities would create an identifiable urban center, ultimately adding as many as 8,600 residents or 12,000 employees to the Bayfront. This development could increase pressures on developable land which surrounds the site.

The project would eventually require improvements to utility and road systems. These improvements would induce growth by accommodating additional development beyond that which already exists. Much of the land in the vicinity in the project area--in West Berkeley and West Oakland, and east of the railroad tracks in Emeryville--would be significantly underutilized in comparison to the land in the Bayfront. This means that the value of the improvements in proportion to the value of the land would be lower in these surrounding areas than in the Bayfront, creating an economic incentive to developers to intensify the use of the land.

Some of this land could also accommodate secondary businesses that would complement commercial development in the Bayfront. Primary jobs in the Bayfront would be office-related. The Plan also contains provisions to encourage secondary job growth (service-oriented businesses) in the Bayfront.

Land in the surrounding area is primarily occupied with industrial uses at present. The ultimate result of the Specific Plan growth could be to induce a significant change in the types of uses in these areas as well, indirectly causing further displacement of manufacturing jobs. The effect of these impacts cannot be measured precisely, especially in light of the changes which are already occurring in these areas as a result of market pressures.

## **C. CUMULATIVE IMPACTS**

Cumulative impacts are those which result from the project considered in conjunction with those resulting from additional growth already occurring in the vicinity, and from additional growth which might be induced by the project. These impacts



could include greater increases in traffic, air pollutants, and noise, increased burdens on public facilities and utilities, and additional commitment of nonrenewable resources.

Most impacts would be related to increases in traffic. The growth expected within the City of Emeryville has been accounted for in this report. Regionally, cumulative impacts are related to the overall efficiency of the transportation system and the location of land uses relative to each other.

The principal environmental effect of population and employment growth in the San Francisco Bay Area is the consumption of undeveloped land, causing its removal from agricultural use or from the region's supply of natural habitats. This development of new lands occurs primarily on the outer boundaries of the urbanized area, and it has created inefficient and environmentally disruptive travel patterns, with attendant increases in air pollution and noise.

Development of underutilized lands within urban areas of the metropolitan region is an alternative to urban and suburban sprawl which generally creates a positive cumulative impact. Intensive urban uses on close-in lands makes possible shorter and less frequent automobile trips, minimizes new habitat loss and facilitates the creation of multi-use environments in which activity occurs throughout the day. This is true, however, only when the new development does not result in the demolition of historic structures which are important to the larger community, does not seriously impede internal traffic circulation, and does not result in the loss of open space, views scenic areas or wildlife habitats.

Development of the Emeryville Bayfront according to the Specific Plan would not create any of these irreversible regional losses. The Bayfront is strategically located near existing major employment areas; it is served by existing infrastructure; and it is adjacent to major travel corridors, situated in such a way that its development can take immediate advantage of and facilitate the improvement of established transit systems. Considering these factors, the Bayfront is underutilized and should be more intensely developed. This intensification is consistent with regional and statewide policies.

This summary analysis will hold true if the industrial uses displaced by the Specific Plan are themselves appropriately located. It is conceivable that these trucking, warehousing and manufacturing companies will relocate to the undeveloped lands on the region's urban fringe, thereby causing the loss of wildlife habitat and open space which might otherwise have been the result of suburban housing and office development. Nevertheless, if this turns out to be the case, the net environmental effect could still be positive: the land, energy and materials needed to locate the proposed Specific Plan uses in a suburban location would be greater than that which would be consumed by the construction of the relocated industries in a suburban location. Traffic generation rates of the displaced industries are lower than those of the housing, retail and office uses to be placed in the Emeryville Bayfront, and truck traffic does not require the use of regionally high-value highway capacity at or near a highly constrained commute node such as the Interstate 80/580 interchange and Bay Bridge approach.

Thus, it is expected that the net cumulative impacts resulting from the Emeryville Bayfront Specific Plan are positive, and no mitigation is required.

## **V. ALTERNATIVES**

### **A. DESCRIPTION OF ALTERNATIVES**

#### **No Project Alternative**

The "No Project" alternative implies that the Specific Plan would not be adopted and that growth in the Bayfront would be controlled by the existing zoning ordinance and the Redevelopment Plan. Both of these documents allow a wide variety of uses in the Emeryville Bayfront. There are no current restrictions or regulations guiding parking, heights and development density, and few guidelines regarding land use.

#### **Restricted Growth**

This alternative would permit development at a lower intensity than that allowed by the Specific Plan. The land uses of the Specific Plan would remain the same, and the conditions for development specified in the Plan would still apply. The amount of total growth permitted would be lowered to half to two-thirds the amount prescribed in the Specific Plan.

### **B. COMPARATIVE EVALUATION OF ALTERNATIVES**

#### **No Project Alternative**

Under this alternative, development of the Bayfront would be determined largely by market pressures. As a result, the environmental consequences would be unpredictable; they could be identical to or more severe than those under the Specific Plan. Since there are currently no development regulations in place, this alternative does not assure a well-designed, well-balanced community. Because development would not be guided comprehensively, this alternative could not assure the viability or use of transportation improvements such as public transit service or the HOV lane proposed by Caltrans. Conflicts between new and existing uses, and among newly developing projects, could also exist as a result.

This alternative could result in large-scale, unplanned, uncoordinated projects, unsupported by utility or transportation facilities or public open spaces and other amenities. These projects could seriously burden local and regional infrastructure and public service. There would be no assurance that views would be protected, and it would be unlikely that a strong pedestrian network would serve the Bayfront or link the Bayfront with East Emeryville and the Peninsula.

In summary, because this alternative does not deal with the Bayfront comprehensively and would leave development decisions entirely to property owners and developers, it is expected that this alternative could result in worse traffic conditions, greater emissions of air pollutants, and more adverse visual impacts. At the same time, there are economic and fiscal reasons for the City to reject this alternative.



## Restricted Growth

Under this alternative, the results could be similar to the Specific Plan but they would not likely be of the same magnitude. The impacts that could result from the Restricted Growth alternative are dependent on the type of development that ultimately takes place. Like the preferred alternative, this alternative would allow flexibility in land uses. If the development that results were primarily non-residential, the impacts on public services would be less severe. If the development that results from this alternative were primarily residential, then the impacts on public services (such as police, fire and school district impacts) may not be significantly reduced over those in the preferred alternative. Traffic levels would be lower because of the decrease primarily in office density. This reduction in trips would result in decreases in air pollutant emissions, noise, and energy consumption. In these terms, the Restricted Growth alternative could be considered an environmentally superior alternative.

However, as the amount of development decreases in intensity, the opportunity to establish a viable public transit system decreases. In addition, developers would not be required to provide TSM or TM programs at lower development densities, and they would be less inclined to implement these programs voluntarily. Without transit and the TSM programs, the number of vehicle trips would not decrease proportionately with the decrease in building space. It is conceivable that the number of trips could be higher than under the preferred alternative. Consequently, the expected benefits of reduced air pollutant emissions, noise, and energy consumption may not materialize. The level of analysis required to test these assumptions are beyond the scope of the EIR. Even if such an analysis could be undertaken, it would still be speculative.

Changes in some other impacts would be no less significant than under the preferred alternative. Changes in land use, for example, would be less severe in terms of intensity; but the land use pattern essentially would be the same, resulting in almost complete alteration of the existing land uses. The character of the community would be altered completely, as it would under the preferred alternative, and most manufacturing and industrial employment would eventually be displaced. Similarly, this alternative would still have the potential to disturb archaeological resources, if they exist, or to expose people to hazardous substances if careful examination of soils and implementation of appropriate project-level mitigation measures are not undertaken. Beneficial impacts similar to those under the preferred alternative would be observed by the ultimate removal of major energy consumers and point sources of pollution.

Because traffic congestion already is severe and public utilities are now constrained, a scenario of less intensive development would require the infrastructure improvements which are proposed for the preferred alternative. It is beyond the scope of this report to address whether these improvements could be supported financially by the decreased development; however, it is important to note that the restricted growth alternative would be environmentally superior to the preferred alternative only if these infrastructure improvements were implemented.

There are also considerations outside the scope of an EIR which the City has indicated as being reasons for preferring a high-density alternative. These are economic issues, primarily related to the greater amount of funds generated by the higher-density alternative and the flexibility to use those funds for improvements in other parts of the City. Most of the City, including most of the Bayfront, is comprised of redevelopment areas; by law, 20 percent of the revenue generated must be used to build low- and moderate-income housing. With additional monies enabled by higher densities, the City would be in a better position to assist its low- and moderate-income households.



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## APPENDIX A: TRAFFIC ANALYSIS





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September 22, 1985

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From: R. Conradt

Subject: Traffic Analysis, Summary  
Emeryville General Plan

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This memorandum summarizes an analysis of traffic generated by development provided for in the proposed general plan. The traffic analysis included estimates of existing traffic conditions and the impacts of additional traffic that could be expected as a result of new land uses and development according to the provisions of the plan.

Existing Traffic Conditions

Figure 1 is a map of existing principal streets and the city limits of Emeryville. Some of the principal streets used by Emeryville traffic, such as San Pablo Avenue and Ashby Avenue, are in Oakland and Berkeley.

For purposes of the analysis, Emeryville was divided into 31 zones, as shown in Figure 2. The existing approximate number of employees and residential dwelling units are listed by zones in Table 1. The totals are about 13,000 employees and 2,700 dwelling units.

TABLE 1

## EXISTING NUMBERS OF EMPLOYEES AND DWELLING UNITS, BY ZONES

| Zones | No. of<br>Employees | No. of<br>Dwelling Units |
|-------|---------------------|--------------------------|
| 1-3   | 1,700               | -                        |
| 4/5   | 570                 | 240                      |
| 6/7   | 870                 | -                        |
| 8/9   | 530                 | -                        |
| 10    | 140                 | 100                      |
| 12    | 430                 | -                        |
| 13    | 940                 | -                        |
| 11/21 | 470                 | 130                      |
| 14/15 | 430                 | -                        |
| 16/18 | 960                 | -                        |
| 19    | 330                 | -                        |
| 20    | 650                 | -                        |
| 22/23 | 70                  | 10                       |
| 24/26 | 170                 | 390                      |
| 27/28 | 1,390               | 580                      |
| 29/30 | 690                 | -                        |
| 31    | 2,220               | 1,250                    |
| Total | 12,560              | 2,700                    |



Some counts of existing traffic volumes were available from the Cities of Emeryville, Oakland and Berkeley, Caltrans, and previous studies by others. This analysis did not include additional traffic counts. However, the available counts were supplemented by estimates of traffic generated by existing development. Trip generation rates used in the estimate were based on the rates used in the EIR for the previous Emeryville plan, and are listed in Table 2. The trips were distributed by direction in accordance with trip distribution percentages applied in the previous EIR and shown in Figure 3. The distribution percentages are shown separately for employee-generated and resident-generated trips. The percentages for resident-generated trips are shown in parentheses.

Traffic assignments to principal streets and intersections were made for both a.m. and p.m. peak hours to supplement available counts. Estimated existing peak hour volumes were used to calculate volume-to-capacity (v/c) ratios and intersection levels of traffic service for existing a.m. and p.m. peak hour conditions. Principal intersections are designated by numbers in Figure 4. The numbers of existing traffic lanes on each street are indicated in Figure 5, in which each line represents a single lane.

Table 3 lists the existing a.m. and p.m. peak hour v/c ratio and level of service for each of the principal intersections. The v/c ratios and levels of service do not reflect traffic conditions caused by peak hour congestion on the freeways or railroad operations. In all intersections, the p.m. peak hour is more critical than the a.m. peak hour.

TABLE 2

## GENERATION RATES OF VEHICLE TRIPS BY DIRECTION

| Trip Generator                             | Trip Generation Rates |                    |                   |                    |
|--------------------------------------------|-----------------------|--------------------|-------------------|--------------------|
|                                            | A.M. Peak Hour        |                    | P.M. Peak Hour    |                    |
|                                            | Inbound Direction     | Outbound Direction | Inbound Direction | Outbound Direction |
| (Employees by Type) :                      |                       |                    |                   |                    |
| Office                                     | .37                   | .06                | .07               | .41                |
| Retail                                     | .22                   | .20                | .42               | .43                |
| Commercial                                 | .22                   | .20                | .42               | .43                |
| Industrial<br>Manufacturing<br>& Wholesale | .31                   | .06                | .08               | .30                |
| Hotel                                      | .30                   | .36                | .38               | .35                |
| Mixed                                      | .30                   | .10                | .20               | .35                |
| (Residential Dwelling Units)               |                       |                    |                   |                    |
|                                            | 0                     | .40                | .35               | .15                |

Based on rates used in previous Emeryville Plan EIR

TABLE 3

## EXISTING INTERSECTION V/C RATIOS AND LEVELS OF SERVICE

| Intersection<br>Number | A.M. Peak Hour |     | P.M. Peak Hour |     |
|------------------------|----------------|-----|----------------|-----|
|                        | V/C            | LOS | V/C            | LOS |
| 1                      | 0.52           | A   | 0.60           | A   |
| 2                      | 0.71           | C   | 0.74           | C   |
| 3                      | 0.68           | B   | 0.77           | C   |
| 4                      | -              | A   | -              | A   |
| 12                     | 0.08           | A   | 0.13           | A   |
| 13                     | 0.28           | A   | 0.32           | A   |
| 14                     | 0.59           | A   | 0.74           | C   |
| 15*                    | 0.65           | B   | 0.93           | E   |
| 16                     | 0.54           | A   | 0.54           | A   |
| 17                     | 0.54           | A   | 0.78           | C   |
| 18                     | 0.26           | A   | 0.61           | B   |
| 19                     | 0.39           | A   | 0.41           | A   |
| 20                     | 0.79           | C   | 0.95           | E   |
| 21                     | 0.53           | A   | 0.41           | A   |
| 22                     | 0.46           | A   | 0.61           | B   |
| 23                     | 0.46           | A   | 0.51           | A   |
| 24                     | 0.65           | B   | 0.72           | C   |
| 25                     | 0.38           | A   | 0.46           | A   |
| 26                     | 0.73           | B   | 0.95           | E   |

\* Does not include effects of trains in intersection

Source: RC



Total two-way average daily traffic volumes (ADT) were estimated on the basis of the p.m. peak hour volumes. The estimated existing ADT on principal streets and p.m. peak hour levels of service for the principal intersections are shown in Figure 6. ADTs are given in thousands of vehicles (the last three zeros are omitted). The levels of service are calculated for conditions assuming traffic signal control at each intersection, although some of the intersections do not currently require traffic signals.

#### Future Traffic Conditions

Future conditions under the proposed plan call for a greater number of employees in most zones and more dwelling units in some. Table 4 lists the numbers of employees and dwelling units added, by zones. The totals are about 18,000 added employees and 2,800 additional dwelling units.

The changes in employment and dwelling units were used to calculate added trip generation by zones, using the trip generation rates in Table 2. The added trips were then distributed, according to the percentages in Figure 3, and assigned to the principal streets and intersections on the proposed future street system. The numbers of lanes assumed for the future streets are indicated in Figure 7. Locations of principal intersections are indicated by intersection numbers in Figure 8.

Future additional trips were added to existing traffic volumes and the combined total volume was analyzed for a.m. and p.m.

TABLE 4

APPROXIMATE NUMBERS OF EMPLOYEES AND DWELLING UNITS ADDED  
BY FUTURE DEVELOPMENT IN PROPOSED PLAN (A-2), BY ZONES

| Zones | Added No. of<br>Employees | Added No. of<br>Dwelling Units |
|-------|---------------------------|--------------------------------|
| 6/7   | 400                       | 70                             |
| 8/9   | 2,400                     | 150                            |
| 10    | -                         | 60                             |
| 12    | 600                       | -                              |
| 13    | 1,000                     | -                              |
| 11/21 | 100                       | 600                            |
| 14/15 | 100                       | -                              |
| 16-18 | 1,350                     | -                              |
| 19    | 300                       | -                              |
| 20    | 1,050                     | -                              |
| 22/23 | 500                       | -                              |
| 24-26 | 200                       | -                              |
| 27/28 | 4,800                     | 1,150                          |
| 29/30 | 2,850                     | 770                            |
| 31    | 2,450                     | -                              |
| Total | 18,100                    | 2,800                          |

Source: SCA

peak hour conditions in each of the principal intersections. The resulting v/c ratios and levels of service for future conditions are listed in Table 5. The a.m. and p.m. levels of service for intersections and the estimated future ADTs (in thousands) are shown in Figure 9.



TABLE 5

## FUTURE INTERSECTION V/C RATIOS AND LEVELS OF SERVICE

| Intersection<br>Number | A.M. Peak Hour |     | P.M. Peak Hour |     |
|------------------------|----------------|-----|----------------|-----|
|                        | V/C            | LOS | V/C            | LOS |
| 1                      | 0.87           | D   | 0.79           | C   |
| 2                      | 0.86           | D   | 0.96           | E   |
| 3                      | 0.91           | E   | 0.97           | E   |
| 4                      | 0.36           | A   | 0.62           | B   |
| 5                      | 0.33           | A   | 0.65           | B   |
| 6                      | 0.52           | A   | 0.37           | A   |
| 7                      | 0.88           | D   | 0.75           | C   |
| 8                      | 0.32           | A   | 0.61           | B   |
| 9                      | 0.34           | A   | 0.58           | A   |
| 10                     | 0.71           | C   | 0.80           | C   |
| 11                     | 0.66           | B   | 0.87           | D   |
| 12                     | 0.46           | A   | 0.68           | B   |
| 13                     | 0.31 (a)       | A   | 0.41 (a)       | A   |
| 14                     | 0.53 (a)       | A   | 0.62 (a)       | B   |
| 15*                    | 0.58 (b)       | A   | 0.90 (b)       | D   |
| 16                     | 0.57 (a)       | A   | 0.57 (b)       | A   |
| 17                     | 0.65           | B   | 0.85           | D   |
| 18                     | 0.49           | A   | 0.98           | E   |
| 19                     | 0.78           | C   | 0.88           | D   |
| 20                     | 0.83           | D   | 0.96           | E   |
| 21                     | 0.82           | D   | 0.93           | E   |
| 22                     | 0.68           | B   | 0.98           | E   |
| 23                     | 0.66           | B   | 0.85           | D   |
| 24                     | 0.96           | E   | 0.89           | D   |
| 25                     | 0.66           | B   | 0.70           | B   |
| 26                     | 0.84           | D   | 0.85           | D   |

\* Does not include effects of trsins in intersection

(a) Indicates intersection on Hollis (one-way S. bound)

(b) Indicates intersection on Doyle extension (1-way N.E. D)

When a or b are noted, the more critical intersection is shown.  
Future conditions assume proposed street improvements.

Source: RC



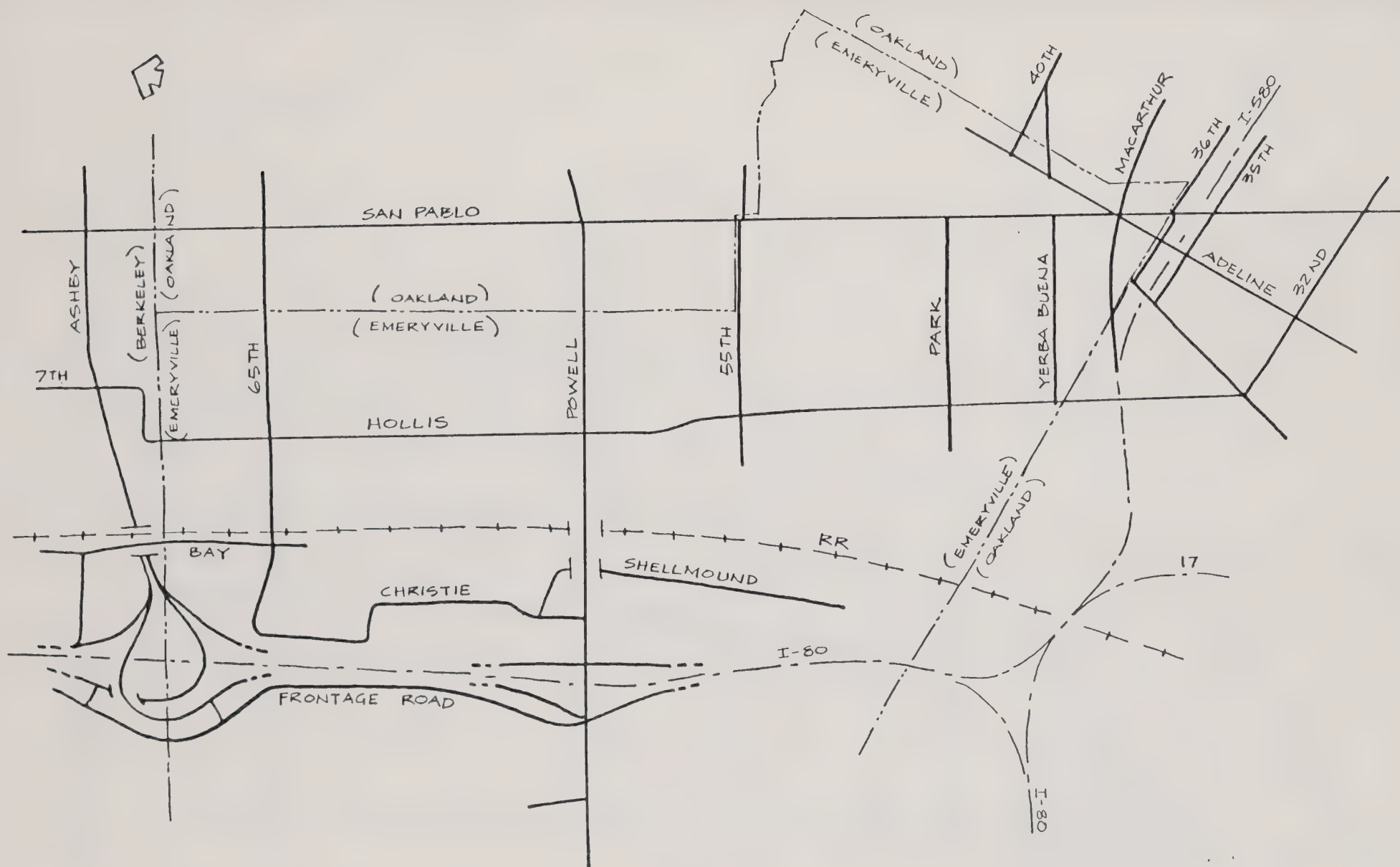


FIGURE 1

EXISTING PRINCIPAL STREETS AND CITY LIMITS





FIGURE 2

ANALYSIS ZONES

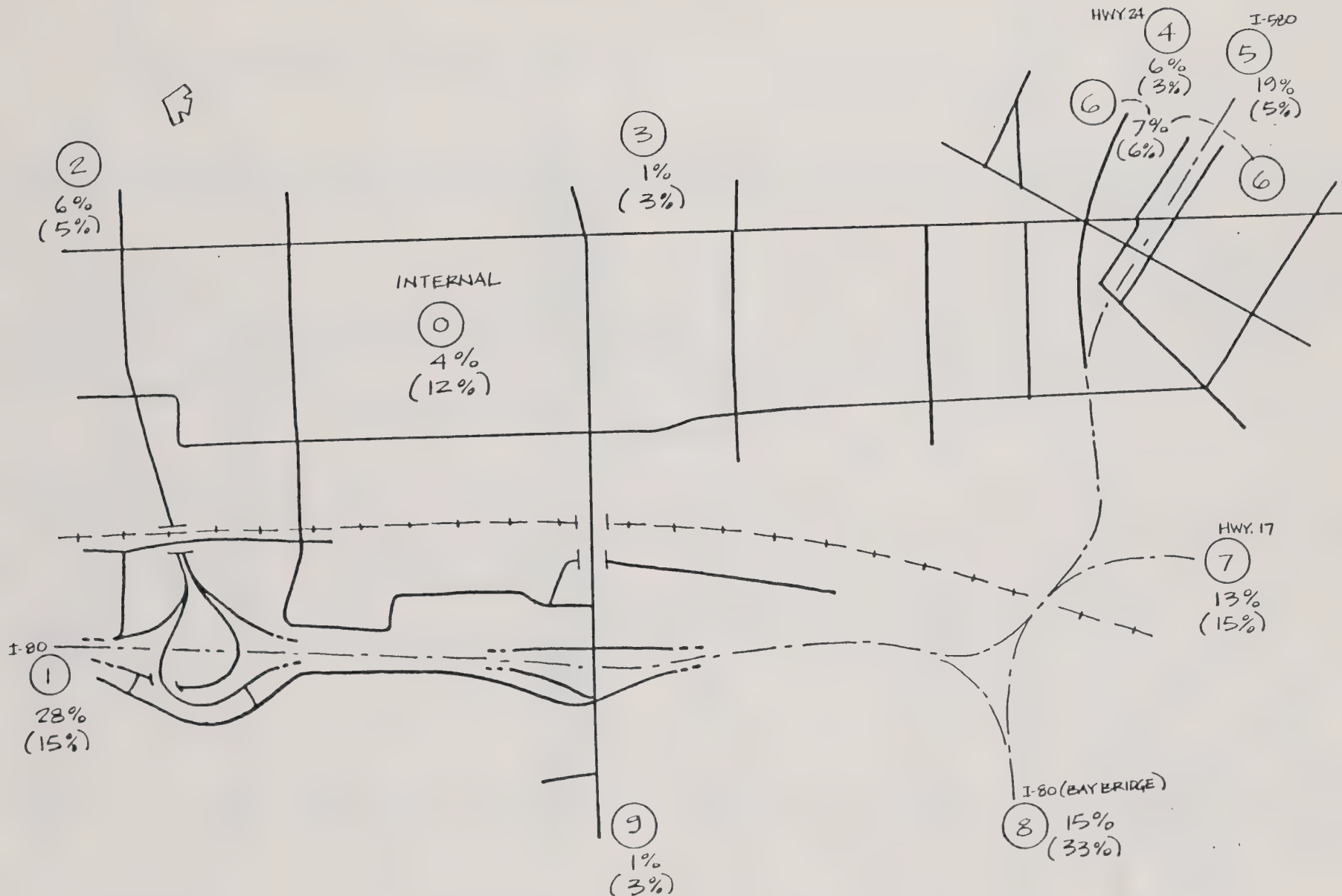


FIGURE 3

PERCENT DISTRIBUTION BY DIRECTION OF EMPLOYEE (RESIDENT) GENERATED TRIPS

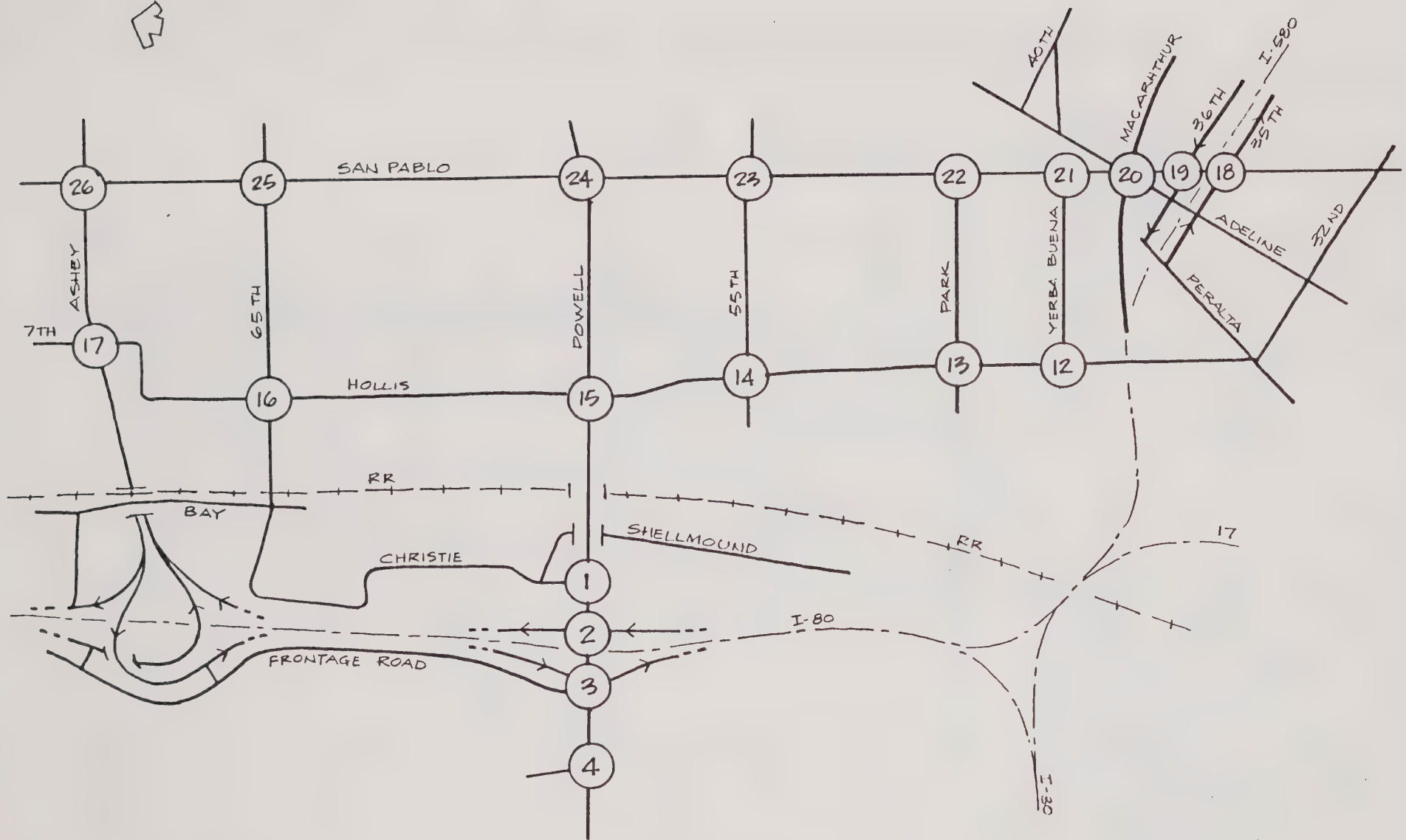


FIGURE 4

PRINCIPAL EXISTING INTERSECTIONS



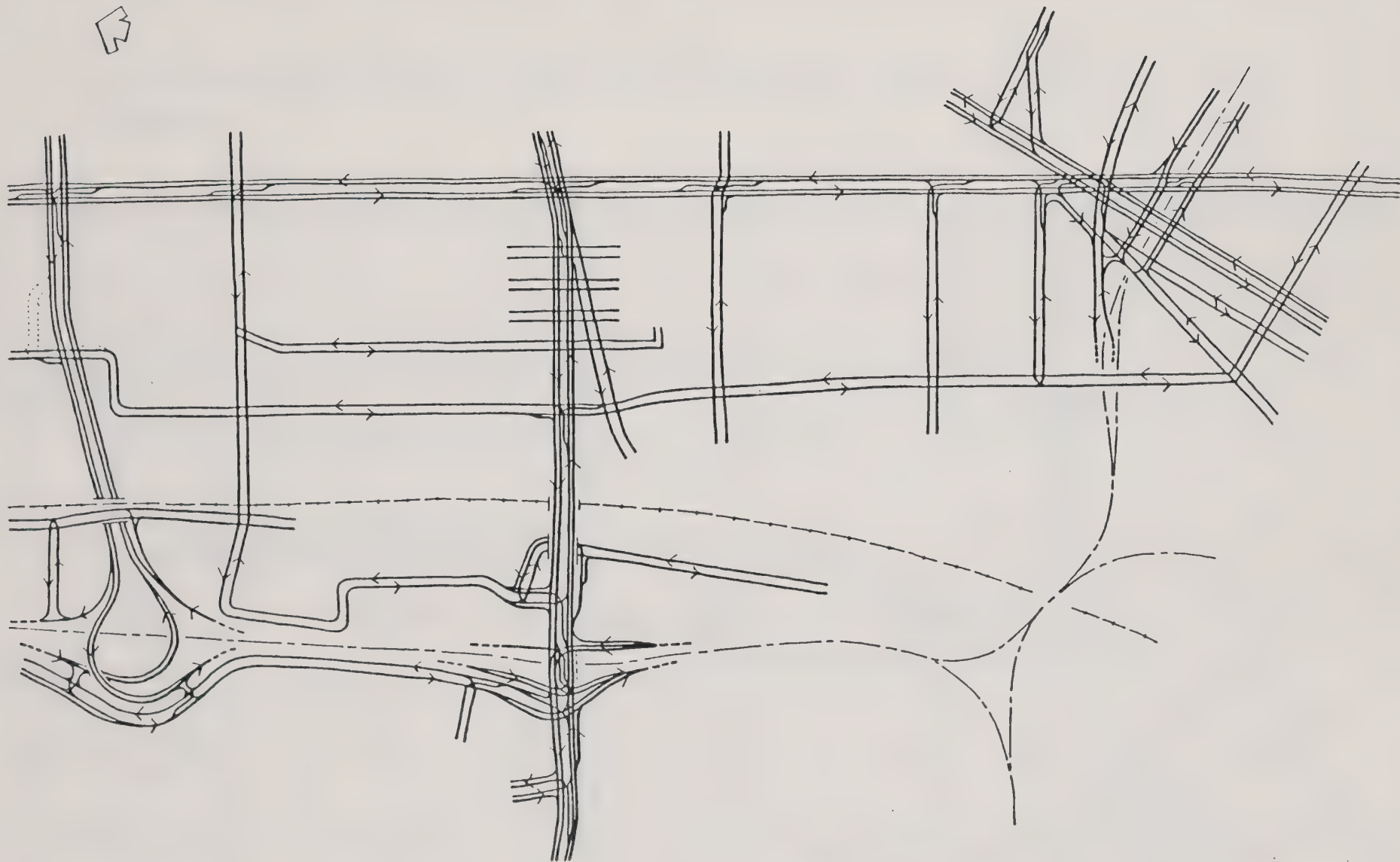


FIGURE 5

EXISTING TRAFFIC LANES ON PRINCIPAL STREETS



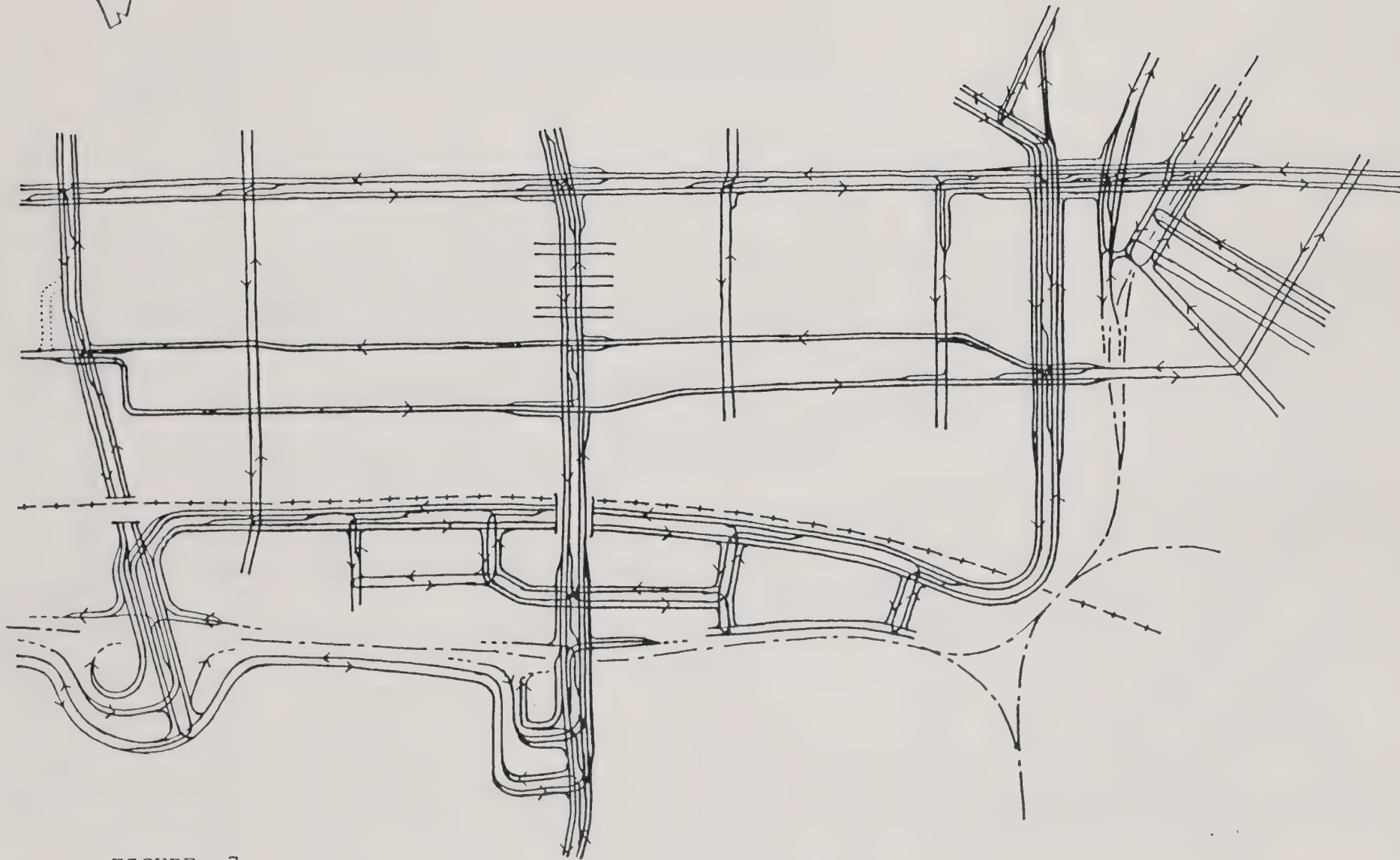


FIGURE 7

TRAFFIC LANES ASSUMED ON PROPOSED FUTURE STREETS



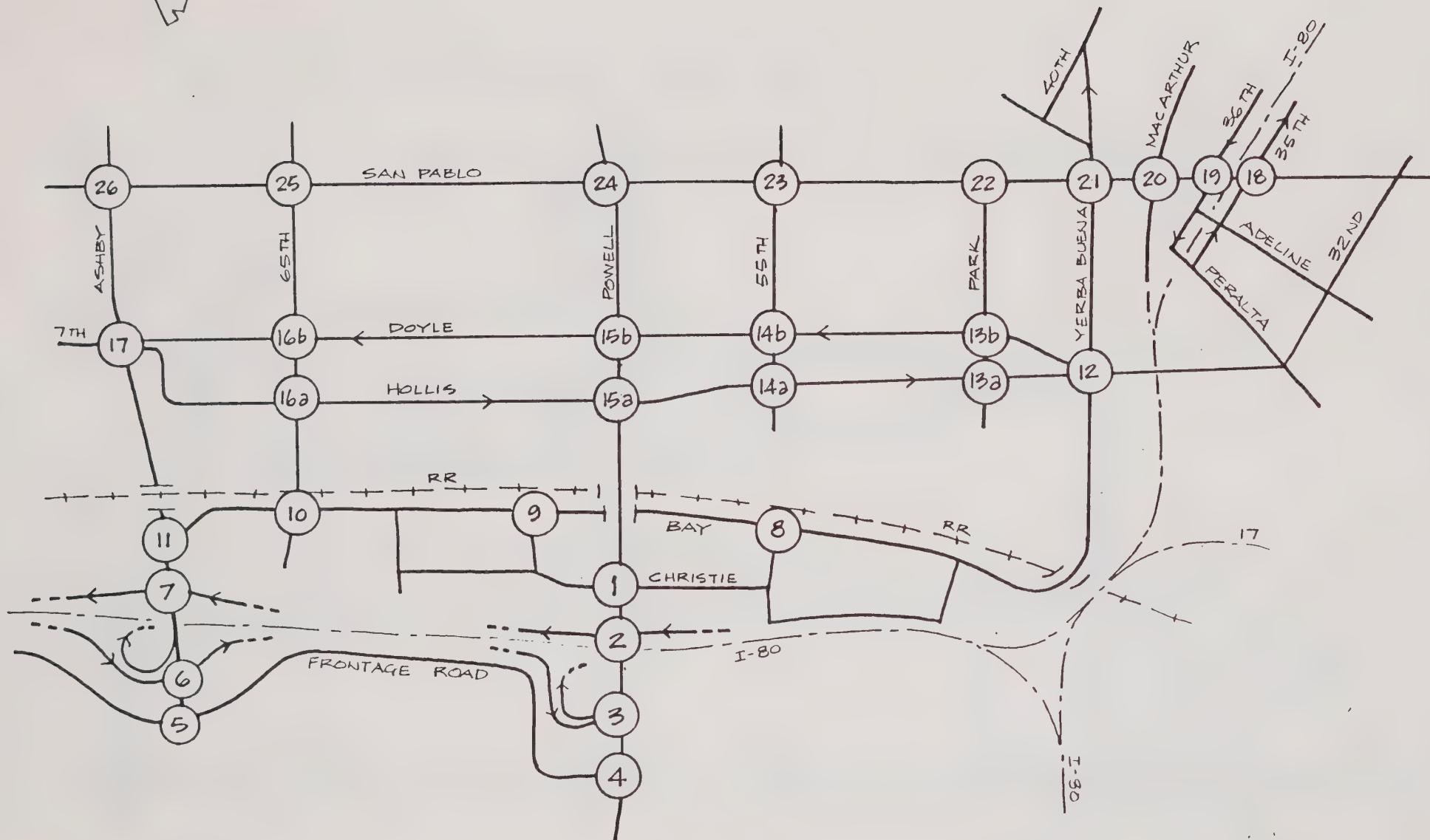


FIGURE 8

INTERSECTIONS ON PROPOSED FUTURE PRINCIPAL STREETS







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Emeryville General Plan  
FIRST SUPPLEMENT

---

This is a first supplement to the memorandum of September 22, 1985. It refers to tables and figures in the earlier memorandum, and may be read as a continuation of that memorandum.

The set of future development conditions assumed in the traffic analysis presented in Table 5 and Figure 9 is referred to in the planning study documents as Alternative A-2.

The proposed plan for the Bayfront area would allow some range of redevelopment options for individual land parcels within the plan area. The plan was tested by assuming other options for the redevelopment of individual parcels, calculating the traffic that would be generated by those options, and comparing the results to the traffic generated by the A-2 conditions.

The Bayfront area includes zones 27, 28, 29 and 30 (see Figure 2). The future number of employees and residential dwelling units for these four zones were calculated by

Sedway Cooke Associates for the three alternative development scenarios, assuming conditions different from those in A-2. The employee and dwelling unit data were used in combination with the trip generation rates in Table 2 to estimate future vehicle trip ends for each zone and each scenario. The results in terms of peak hour trips are listed in Table 6. Scenario 3 generates the largest volume of trips in the peak direction in both peak hours.

Table 7 presents a comparison of employee- and resident-generated trip ends for Scenario 3 and Alternative A-2. The difference in trips between A-2 and Scenario 3 is also shown in Table 7, in parentheses. The only significant increases in trips are in Zone 29.

The differences for Zone 29 between A-2 and Scenario 3 in total employee- and resident-generated trips were assigned to the future street system shown in Figure 8. The resulting difference in traffic volume was compared to the total volume on each street segment for Alternative A-2 and the percentage of volume increase was calculated. Figure 10 shows the percentages for all street segments on which Scenario 3 resulted in an increase of one percent or more, compared to the A-2 traffic volumes.

Scenario 3 would increase the traffic volumes through intersections 1-3, 8, 12, and 18-21 sufficiently to affect the v/c ratios calculated previously for the future A-2 conditions. Adjusted v/c ratios and levels of service for Scenario 3 conditions are shown in parentheses in Table 8.

TABLE 6

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COMPARISON OF PEAK HOUR VEHICLE TRIP ENDS  
GENERATED BY ALTERNATIVE BAYFRONT DEVELOPMENT SCENARIOS

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| Development<br>Alternative | Peak Hour Trip Ends, By Direction |          |                |          |
|----------------------------|-----------------------------------|----------|----------------|----------|
|                            | A.M. Peak Hour                    |          | P.M. Peak Hour |          |
|                            | Inbound                           | Outbound | Inbound        | Outbound |
| A-2                        | 3,271                             | 1,926    | 2,236          | 4,229    |
| Scenario 1                 | 3,610                             | 1,480    | 1,580          | 4,380    |
| Scenario 2                 | 1,740                             | 2,290    | 2,200          | 2,720    |
| Scenario 3                 | 3,685                             | 1,305    | 1,735          | 4,550    |

---



TABLE 7

COMPARISON OF EMPLOYEE- AND RESIDENT-GENERATED TRIP ENDS  
BY ZONE, FOR A-2 AND SCENARIO 3

|      |                | Peak Hour Trip Ends, By Direction |           |                |              |
|------|----------------|-----------------------------------|-----------|----------------|--------------|
| ZONE | Generator/Alt. | A.M. Peak Hour                    |           | P.M. Peak Hour |              |
|      |                | Inbound                           | Outbound  | Inbound        | Outbound     |
| 27   | Emp. A-2       | 748                               | 127       | 155            | 825          |
|      | Emp. Sc3       | 680 (-68)                         | 110 (-17) | 130 (-25)      | 755 (-70)    |
|      | Res. A-2       | -                                 | 320       | 280            | 120          |
|      | Res. Sc3       | -                                 | 80 (-240) | 65 (-215)      | 90 (-90)     |
| 28   | Emp. A-2       | 1,471                             | 306       | 360            | 1,608        |
|      | Emp. Sc3       | 1,425 (-46)                       | 275 (-31) | 375 (+15)      | 1,635 (+27)  |
|      | Res. A-2       | -                                 | 329       | 288            | 124          |
|      | Res. Sc3       | -                                 | 270 (-59) | 240 (-48)      | 105 (-19)    |
| 29   | Emp. A-2       | 720                               | 252       | 288            | 816          |
|      | Emp. Sc3       | 1,285 (+565)                      | 290 (+38) | 360 (+72)      | 1,455 (+639) |
|      | Res. A-2       | -                                 | 307       | 269            | 115          |
|      | Res. Sc3       | -                                 | 10 (-297) | 10 (-259)      | 5 (-110)     |
| 30   | Emp. A-2       | 332                               | 285       | 596            | 621          |
|      | Emp. Sc3       | 295 (-37)                         | 265 (-20) | 560 (-36)      | 570 (-51)    |
|      | Res. A-2       | -                                 | -         | -              | -            |
|      | Res. Sc3       | -                                 | -         | -              | -            |

TABLE 8

FUTURE INTERSECTION V/C RATIOS AND LEVELS OF SERVICE, A-2  
(ADJUSTED VALUES FOR SCENARIO 3 SHOWN IN PARENTHESES)

| Intersection<br>Number | A.M. Peak Hour |      |      | P.M. Peak Hour |      |      |
|------------------------|----------------|------|------|----------------|------|------|
|                        |                | V/C  | LOS  |                | V/C  | LOS  |
| 1                      | (0.91)         | 0.87 | D(E) | (0.81)         | 0.79 | C(D) |
| 2                      | (0.87)         | 0.86 | D(D) | (0.98)         | 0.96 | E(E) |
| 3                      | (0.95)         | 0.91 | E(E) | (0.99)         | 0.97 | E(E) |
| 4                      |                | 0.36 | A    |                | 0.62 | B    |
| 5                      |                | 0.33 | A    |                | 0.65 | B    |
| 6                      |                | 0.52 | A    |                | 0.37 | A    |
| 7                      |                | 0.88 | D    |                | 0.75 | C    |
| 8                      | (0.37)         | 0.32 | A(A) | (0.68)         | 0.61 | B(B) |
| 9                      |                | 0.34 | A    |                | 0.58 | A    |
| 10                     |                | 0.71 | C    |                | 0.80 | C    |
| 11                     |                | 0.66 | B    |                | 0.87 | D    |
| 12                     | (0.48)         | 0.46 | A(A) | (0.71)         | 0.68 | B(C) |
| 13                     |                | 0.31 | A    |                | 0.41 | A    |
| 14                     |                | 0.53 | A    |                | 0.62 | B    |
| 15                     |                | 0.58 | A    |                | 0.90 | D    |
| 16                     |                | 0.57 | A    |                | 0.57 | A    |
| 17                     |                | 0.65 | B    |                | 0.85 | D    |
| 18                     | (0.50)         | 0.49 | A(A) | (1.00)         | 0.98 | E(E) |
| 19                     | (0.82)         | 0.78 | C(D) | (0.91)         | 0.88 | D(E) |
| 20                     | (0.87)         | 0.83 | D(D) | (0.99)         | 0.96 | E(E) |
| 21                     | (0.84)         | 0.82 | D(D) | (1.04)         | 0.93 | E(F) |
| 22                     |                | 0.68 | B    |                | 0.98 | E    |
| 23                     |                | 0.66 | B    |                | 0.85 | D    |
| 24                     |                | 0.96 | E    |                | 0.89 | D    |
| 25                     |                | 0.66 | B    |                | 0.70 | B    |
| 26                     |                | 0.84 | D    |                | 0.85 | D    |

See notes under Table 5.

Source: RC

Figure 11 shows adjusted intersection levels of service and ADTs, representing future conditions for Scenario 3, where they are affected significantly by the changes in traffic volumes from A-2 conditions, as shown in Figure 9.





FIGURE 10

PERCENTAGE INCREASE IN FUTURE ADTs FOR SCENARIO 3 COMPARED TO A-2



FIGURE 11

ADJUSTED INTERSECTION LEVELS OF SERVICE (A.M./P.M.) AND ADTs (IN 1000s) FOR SCENARIO 3 WHERE AFFECTED SIGNIFICANTLY BY DIFFERENCES FROM A-2 TRAFFIC VOLUMES

## APPENDIX B: CALINE 3 MODEL AND ASSUMPTIONS





## APPENDIX

### Caline 3 Model and Assumptions

Normalized concentrations generated by the Caline-3 model were adjusted for the appropriate emission factor (a function of average speed) and hourly traffic volumes. The Caline-3 model is a third-generation line source air quality model that is based on the Gaussian diffusion equation and employs a mixing zone concept to characterize pollutant dispersion over the roadway. Given source strength, meteorology, site geometry and site characteristics, the model predicts pollutant concentrations for receptors located within 150 meters of the roadway.

The following variables were specified as worst-case conditions for a 1-hour average concentration.

- windspeed of 1 mps
- a wind blowing at an angle of 22 degrees to the road with the greatest traffic.
- stable atmospheric conditions (Pasquill E)
- background level of 5.4 ppm in 2000
- a mixing height of 100 meters
- a receptor 25 feet from the curb

Eight-hour concentrations were generated by adjusting the 1-hour concentrations for:

- a traffic volume of 55% of the ADT
- a background level of 3.6 ppm

Emission factors were provided by the Bay Area Air Quality Management District for a typical Bay Area vehicle mix. Vehicle speeds were assumed to be related to Level of Service, with LOS A-C associated with a 15mph average speed, LOS D-E associated with 10mph, and LOS F associated with a 5mph speed.





## APPENDIX C: FUNDAMENTAL CONCEPTS OF ENVIRONMENTAL NOISE



## Fundamental Concepts of Environmental Noise

This section provides background information to aid in understanding the technical aspects of this report.

Three dimensions of environmental noise are important in determining subjective response. These are:

- a. the intensity or level of the sound;
- b. the frequency spectrum of the sound;
- c. the time-varying character of the sound.

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing.

The "frequency" of a sound refers to the number of complete pressure fluctuations per second in the sound. The unit of measurement is the cycle per second (cps) or Hertz (Hz). Most of the sounds which we hear in the environment do not consist of a single frequency, but of a broad band of frequencies, differing in level. The quantitative expression of the frequency and level content of a sound is its sound spectrum. A sound spectrum for engineering purposes is typically described in terms of octave bands which separate the audible frequency range (for human beings, from about 20 to 20,000 Hz) into ten segments.

Many rating methods have been devised to permit comparisons of sounds having quite different spectra. Fortunately, the simplest method correlates with human response practically as well as the more complex methods. This method consists of evaluating all of the frequencies of a sound in accordance with a weighting that progressively and severely deemphasizes the importance of frequency components below 1000 Hz, with mild deemphasis above 5000 Hz. This type of frequency weighting reflects the fact that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency midrange.

The weighting curve described above is called "A" weighting, and the level so measured is called the "A-weighted sound level", or simply "A-level".

The A-level in decibels is expressed "dBA"; the appended letter "A" is a reminder of the particular kind of weighting used for the measurement. In practice, the A-level of a sound source is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. All U.S. and international standard sound level meters include such a filter. Typical A-levels measured in the environment and in industry are shown in Figure A-1.

Although the A-level may adequately describe environmental noise at any instant in time, the fact is that the community noise level varies continuously. Most environmental noise includes a conglomeration of distant noise sources which creates a relatively steady background noise in which no particular source is identifiable. These distant sources may include traffic, wind in trees, industrial activities, etc. These noise sources are relatively constant from moment to moment, but vary slowly from hour to hour as natural forces change or as human activity follows



its daily cycle. Superimposed on this slowly varying background is a succession of identifiable noisy events of brief duration. These may include nearby activities or single vehicle passages, aircraft flyovers, etc., which cause the environmental noise level to vary from instant to instant.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. The L10 is the A-weighted sound level equaled or exceeded during 10 percent of a stated time period. The L10 is considered a good measure of the "average peak" noise. The L50 is the A-weighted sound level that is equaled or exceeded 50 percent of a stated time period. The L50 represents the median sound level. The L90 is the A-weighted sound level equaled or exceeded during 90 percent of a stated time period. The L90 is used to describe the background noise.

As it is often cumbersome to describe the noise environment with these statistical descriptors, a single number descriptor called the Leq is also widely used. The Leq is defined as the equivalent steady-state sound level which in a stated period of time would contain the same acoustic energy as the time-varying sound level during the same time period. The Leq is particularly useful in describing the subjective change in an environment where the source of noise remains the same but there is change in the level of activity. Widening roads and/or increasing traffic are examples of this kind of situation.

In determining the daily measure of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises.

During the nighttime, exterior background noises are generally lower than the daytime levels. However most household noise also decreases at night and exterior noises become very noticeable. Further most people are sleeping at night and are very sensitive to noise intrusion.

To account for human sensitivity to nighttime noise levels a descriptor, Ldn, (day-night equivalent sound level) was developed. The Ldn divides the 24-hour day into the daytime of 7 am to 10 pm and the nighttime of 10 pm to 7 am. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The Ldn, then, is the A-weighted average sound level in decibels during a 24-hour period with 10 dBA added to the hourly Leqs during the nighttime. For highway noise environments the Leq during the peak traffic hour is approximately equal to the Ldn.

The effects of noise on people can be listed in three general categories:

- 1) subjective effects of annoyance, nuisance, dissatisfaction;
- 2) interference with activities such as speech, sleep, learning;
- 3) physiological effects such as startle, hearing loss.

The sound levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Unfortunately, there is as yet no completely satisfactory measure of the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance, and habituation to noise over differing individual past experiences with noise.

Thus, an important parameter in determining a person's subjective reaction to a new noise is the existing noise environment to which one has adapted: the so-called "ambient" noise. "Ambient" is defined as "the all-encompassing noise associated with a given environment, being a composite of sounds from many sources, near and far". In general, the more a new noise exceeds the previously existing ambient, the less acceptable the new noise will be judged by the hearers.

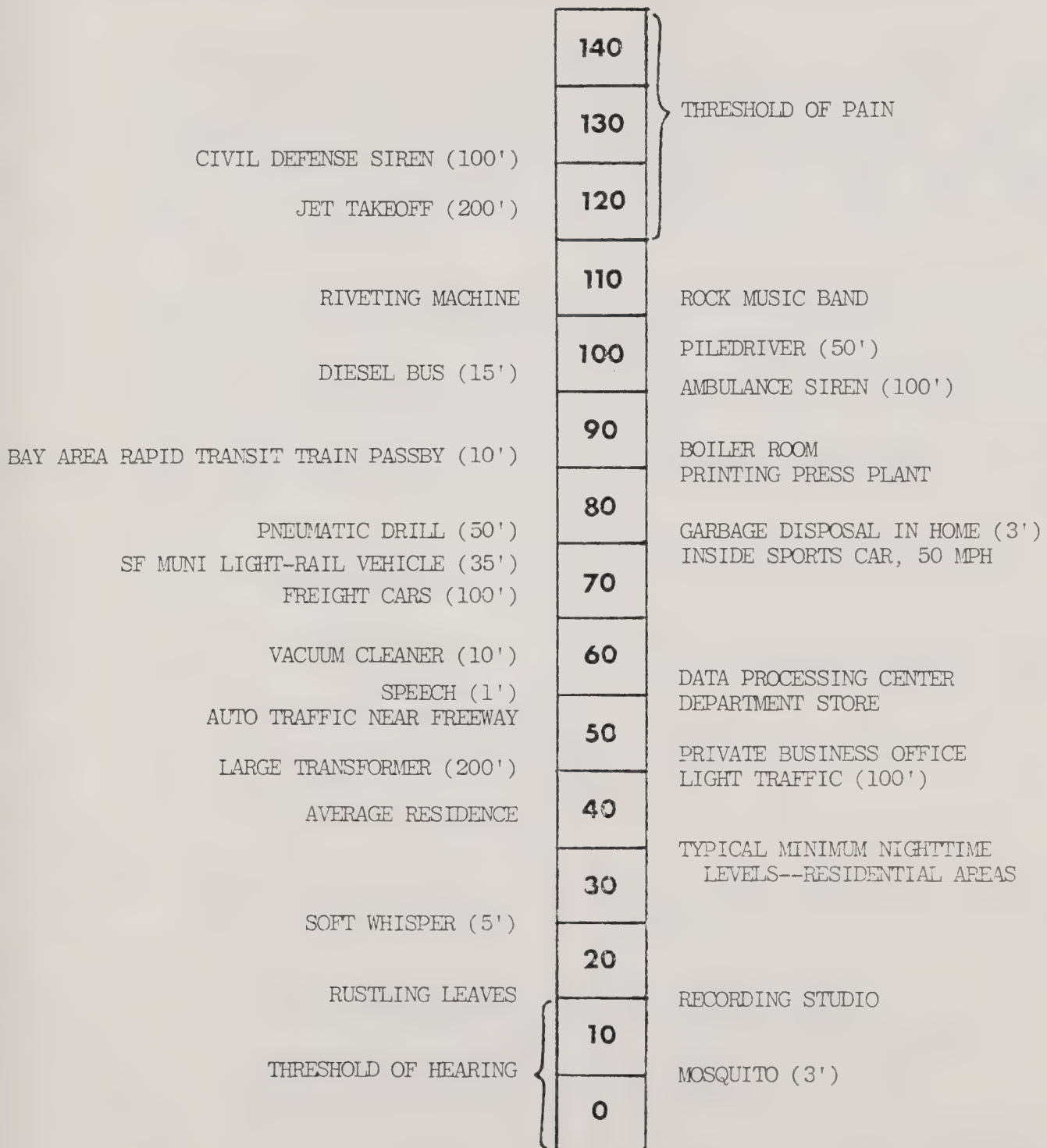
With regard to increases in noise level, knowledge of the following relationships will be helpful in understanding the quantitative sections of this report:

- a) Except in carefully controlled laboratory experiments, a change of only 1 dBA cannot be perceived.
- b) Outside of the laboratory, a 3-dBA change is considered a just-noticeable difference.
- c) A change in level of at least 5 dBA is required before any noticeable change in community response would be expected.
- d) A 10-dBA change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse change in community response.





A-WEIGHTED SOUND  
PRESSURE LEVEL,  
IN DECIBELS



(100') = DISTANCE IN FEET  
BETWEEN SOURCE  
AND LISTENER

FIGURE A-1: TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT AND INDUSTRY



## APPENDIX D: TRANSPORTATION SYSTEMS MANAGEMENT

Transportation Systems Management ("TSM") programs increase the efficiency of a community's transportation network by reducing the volume of single-occupant vehicles on the roadways. Such programs are used both in the Bay Area and around the United States as a means of mitigating the traffic and air quality impacts of large-scale development. TSM can also be used as a regulatory tool, ensuring that development of a given intensity will not overburden a community's transportation system. A combination of incentives and disincentives are usually used to achieve TSM program goals.

The TSM Program for Emeryville can either be applied only to those developers who seek to build at a higher intensity than the "standard" floor area ratio (FAR), or to all developers of projects of a certain size within the city. In the former case, the developer would enact an individual transportation management (TM) program as a trade-off for more intense development. In the latter case, participation in a municipally-coordinated, areawide program would be required of all new developments or establishments meeting certain size criteria. The project-by-project TMs appear to be less effective than the coordinated TSM program. However, the area-wide program requires good program management and wide participation in order to be successful.

The TSM Program should be composed of the following elements (some of which are included in the Specific Plan provisions):

1. Capacity-Building Measures. Low-cost capital improvements to the current road network which increase the capacity of the system. Such measures include:
  - synchronization of traffic signals
  - restrictions on driveway spacing
  - provision of off-street bus stops and turn-outs
  - selective truck routing
  - restriction of turning movements
  - signing and marking revisions.
2. Trip Reduction Measures. Steps which decrease the quantity of traffic generated by a given project, accomplished by reducing single and double occupant vehicle use. The following steps should be considered:
  - enactment of ridesharing/carpooling/vanpooling programs
  - promotion of staggered work hours/flextime/compressed work week
  - establishment of preferential parking stalls for carpools and vanpools
  - mixing of land uses to reduce trip generation
  - construction of sidewalks, bike lanes and pedestrian walkways
  - mandatory construction of showers and bicycle storage facilities
  - bonuses for provision of housing in conjunction with employment centers
  - promotion of employer-paid transit subsidies.
3. Parking Management. Reduction in parking requirements to encourage the trip reduction measures outlined above.



4. Public Transit Provisions. Improvement of transit service within the Bayfront to increase transit usage and reduce traffic; improvement of transit facilities, including passenger shelters; and provision of transit operating or pass subsidies.

### **Representative TSM Programs**

The implementation of the TSM Program will depend on the organizational approach the City decides to take. A number of approaches taken by cities in the region may be reviewed for comparison.

The TSM ordinance for the City of Pleasanton requires all existing and future employers with 10 or more employees to participate in a TSM information program. Firms with 50 or more employees and employers in major developments are required to implement TSM programs intended to reduce trip generation by 45 percent. Failure to participate in the information program, to complete commuter survey forms, or to enact TSM programs results in fines. Employers are not fined if they fall short of the trip reduction goal provided they are making an earnest attempt to reach the goal and are completing the commuter survey forms. Pleasanton is one of the few suburban communities in the country with a full-time TSM coordinator. The coordinator is responsible for collecting data and reviewing compliance.

The City of Sacramento requires that developers of projects which will accommodate 200 or more workers conduct an educational program and prepare a transportation management plan. The developer may choose from 14 types of reduction measures; different quantities of trip reduction "points" are associated with each. A minimum of two to five trip reduction measures may be selected to comprise the plan. The target trip reduction level is 30 percent. Sacramento also has a parking reduction ordinance which allows substitution of off-street vehicle parking spaces for the provision of incentives to use alternative transportation methods.

A project-specific approach is taken by the City of Burlingame. In 1983, Burlingame permitted construction of a 420,000 square-foot office complex, contingent on enactment of TM strategies by the developer. The developer is required to maintain a specific level of service at a particular intersection through TM measures. Failure to comply obligates the developer to either reimburse the City for the cost of a traffic officer (\$30,000/year), subsidize a public bus line (\$38,000/year), or construct roadway improvements (\$82,000/year). The severity of the penalty depends on how well trip reduction goals are met.

Foster City permits a 15 percent reduction in required parking subject to acceptance of a detailed TM plan which includes ridesharing, transit subsidies, and variable work hours. The City requires an annual report which demonstrates the owner's efforts to encourage trip reduction. Foster City also permits parking reductions for bicycle storage facilities. A similar ordinance in Palo Alto permits a 20 percent reduction in parking spaces with TM measures, but requires that the land gained be used for open space.

TSM may also be initiated by the private sector. In El Segundo, an association representing all of the area's major employers was created to develop an integrated TSM program. The association provides a system for scheduling work hours. About one-quarter of the area's employees now use ridesharing.

## Organization

Given the size and concentrated future development pattern expected in the Bayfront, an areawide Transportation Management Organization (TMO) could operate effectively. The TMO would develop, implement, manage, and market an overall program for trip reduction. A TMO coordinator would work with employers to obtain commute data, establish ridesharing, flextime, and transit subsidy programs, and establish trip reduction goals. The coordinator would implement an areawide carpool matching program, and could implement an areawide vanpool program. The coordinator would also keep data on parking management, working with developers to minimize parking where feasible and provide alternatives to the single-occupant vehicle.

Membership and financial support for the TMO would have two categories: mandatory and voluntary. The distinction could be made along a number of lines but would most likely be based on the size of the project or the requested increase over the standard FAR. Financial support would probably be calculated on a square footage basis. Annual costs might be passed on to the tenant as part of the rent. A one-time fee would probably be incurred by the owner at the time of the project or permit approval to cover TMO expenses until the building is occupied.

If project-by-project TM programs are used, each project owner would be responsible for carrying out and coordinating his or her own program. The owner would be fully responsible for the program's financial support and management. Operating costs would vary greatly depending on the extent to which vanpool and subscription bus service was used.

City staff would be responsible for monitoring the individual programs. Compliance with the trip reduction programs may be enforced in a number of ways. A TSM ordinance may be prepared which specifies the measures to be taken and the goals to be reached. Fines may be placed on owners who do not take certain measures to reduce trip generation. Use of more severe penalties, such as denial of occupancy permits for failure to meet trip reduction goals, may also be explored. Past experience has shown that mandatory TSM participation is far easier to enforce than mandatory attainment of trip reduction goals.



## **APPENDIX E: ENERGY CONSERVATION TECHNIQUES**

The following provides a summary of commonly known site design, construction, and retrofit measures which are energy-efficient. Not included are specific measures required by state standards for insulation and appliance efficiency.

### **General**

Education to encourage implementation of basic conservation methods in all new and existing structures.

Encourage mixed land uses to reduce the average length of trips and reliance on automobiles.

Install sodium-vapor or other energy-efficient streetlights.

Encourage use of public transportation.

Site design to allow solar access to residential dwellings. Landscaping to block winds, shade in summer, allow solar access in winter.

### **Residential: New Development**

Locate housing near public transportation, employment, and services.

Require "passive" solar building design:

- Largest wall and window areas should face south; kitchen and living rooms should be located on this wall.
- Glazed areas should be very limited on north- and east-facing walls.
- Use of overhangs or eaves above south-facing windows will prevent summer overheating, while still allowing winter sun access.
- Design to allow "through" ventilation from windows and doors.

Encourage common walls and clustered residential developments.

Reduce paved areas.

Require drought-tolerant landscaping and water-efficient irrigation systems.

### **Non-Residential: New Development**

Require co-generation (use of waste heat) for industrial sites as a means of more efficient fuel utilization.

Encourage solar energy for process heat and water heating for industrial buildings.



Average illumination in commercial buildings should be restricted to approximately 2.0 watts per square foot.

General commercial lighting (decorative and advertising) should be reduced.

Encourage transportation systems management (TSM) programs to reduce fuel consumption by private vehicles.

Develop building energy management programs to reduce energy use during off-peak hours.

Encourage alternate work hours to reduce peak-load energy requirements.

### **Commercial: Retrofit**

De-lamping: Reduce overall illumination and concentrate "task" lighting where needed.

Insulation where appropriate.

## APPENDIX F: NOISE ABATEMENT MEASURES

Noise can be controlled at the source or at the receiver. Common sources of noise in the Emeryville Bayfront are freeway and local road traffic, rail operations, industrial activities, and aircraft flyovers. Sensitive receivers include residential uses, hotels, hospitals, schools, libraries, churches, parks and some entertainment uses. The following summary of noise sources and potential measures to reduce noise at sensitive receptors is a general description. Not all of the measures identified are economically feasible or directly applicable to Emeryville.

### **Controlling Noise at the Source**

**Traffic Noise.**<sup>1</sup> Highway and local roadway traffic noise tends to be the most prevalent source of noise. There are three general principles of noise control for traffic noise. The first is control of noise in the individual vehicle. This is beyond the scope of Emeryville's control. The second is controlling traffic, which includes routing traffic through areas which are not noise sensitive. This can be accomplished through local roadway design and designation (e.g., arterial versus collector).

The third principle concerns highway and roadway design. Noise intensity can be affected by: adjustments in gradient; depression or elevation of roadway; road-surfacing materials; traffic flow; and noise shields. Noise shields include buildings which are located between the noise receptor and noise source, and barriers, such as noise walls, earth berms and, to a lesser degree, plantings. Plantings are only effective if the growth is dense and the foliage is tall enough to block the "line of sight" to the receptor and deep enough to block some of the sound. The effectiveness of structural barriers are dependent on the acoustical characteristics of the construction material, the thickness and height of the barrier, the amount of diffraction at the top of the barrier, and the distance from the noise source to the barrier and to the noise receptor.

Most of these noise attenuation measures could be implemented by agencies other than the City. Caltrans, for example, could include some of these features in the improvements scheduled for the I-80 freeway; however, this would take some effort on the part of the City and coordination with Caltrans, since the I-80 freeway improvement proposals do not presently account for the possibility of residential construction adjacent to the freeway. Improvements to local roads, such as construction of earth berms, could occur under the implementation of the City; these improvements may not be necessary in the Bayfront.

**Rail Operations.**<sup>2</sup> Rail noise originates from the contact between the wheel and the rail, the propulsion system or the horns. Wheel/rail noise, commonly characterized as squeal (sticking and slipping of the wheel on the rail), impact (caused by

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<sup>1</sup>Abstracted from Engineering Corporation of America, Noise Abatement Barrier Study, February 1975.

<sup>2</sup>Abstracted from U.S. Department of Transportation, Urban Mass Transportation Administration, Urban Rail Noise Abatement Program Digest, May 1980.

discontinuities in the surfaces of the wheel or the rail), and roar (due to small-scale roughness on the surface of wheels and rails) can be reduced by lessening rail vibrations, elimination of rail joints, maintenance to keep rail joints in proper alignment, and routine machining and truing of rail and wheel surfaces. Certain other structural changes can accomplish noise reductions. These include ballast, which consists of crushed rock placed between the track and the roadbed; resilient rail fasteners, or the placement of a resilient layer of material between track and roadbed to reduce vibration; and resiliently mounted "floating slab" track beds. Most of these measures are out of the scope of the City's power. Noise from the propulsion system would be reduced through technological changes; and horn noise is a question of operations.

**Industrial Activities.** Some industrial operations are a direct source of noise. Silencers can in some cases be installed, such as is planned for the Pfizer operations. Industrial sources of noise have not been shown to be a serious problem in the Bayfront.

**Aircraft Flyovers.** Flyovers of jet aircraft have been noted in the Emeryville Bayfront, but this is not a pervasive source of noise for this area. Control of future problems could be accomplished through coordination with the Alameda County Airport Land Use Commission.

### Controlling Noise at the Receptor<sup>3</sup>

**Site Planning.** The arrangement of buildings on a site can be used to minimize noise impacts. These include:

- increasing the distance between the noise source and the receiver;
- placing non-residential land uses such as parking lots, maintenance facilities, and utility areas between the source and receiver;
- locating barrier-type buildings (i.e., less noise sensitive buildings) parallel to the noise source or highway;
- orienting the noise sensitive areas away from the noise.

These techniques can often be implemented through cluster developments. Doubling the distance from a noise source can reduce its intensity by as much as 6 dBA. Noise compatible land uses such as commercial activities can act as buffers, both by distance and by use of the buildings as noise shields. A study has shown that a two-story building can reduce noise levels on the side of the building away from the noise source by about 13 dBA. Buildings can be oriented in such a way to reduce noise. This is effective in shielding open space areas from the noise source.

**Architectural Design.** Noise impacts can be reduced by separating more noise sensitive rooms from less noise sensitive rooms, and locating the more noise sensitive

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<sup>3</sup>Abstracted from U.S. Department of Transportation, Federal Highway Administration, Offices of Research and Development, *The Audible Landscape: A Manual for Highway Noise and Land Use*, November 1974.

rooms furthest away from the noise source. In residences, bedrooms, living rooms and dining rooms are most noise sensitive; kitchens and bathrooms are less so.

Solid walls or reduced window areas in the area of the noise source can cut down on the amount of noise reaching the receiver. Windows can be kept closed, although this is often highly undesirable for some residential uses. The design of balconies should be given some consideration, as improper design can cause noise to reflect into the building.

**Acoustical Construction.** Noise can be intercepted as it passes through the walls, floors, windows, ceilings and doors of a building. Walls provide building occupants with the most protection from exterior noise. The amount of noise protection can be increased by increased wall mass and stiffness, use of cavity partitions, increased airspace, increased stud spacing, use of staggered studs, use of resilient materials to hold the studs and panels together, addition of acoustical blankets, and sealing of cracks and edges.

Windows are one of the acoustically weakest points of a wall. To decrease the amount of noise entering through windows, reduced window size, increased glass thickness, and use of double-glazed windows. Some windows are sound attenuating even while open.

Doors are acoustically weaker even than windows, and represent a more difficult problem in terms of noise attenuation. Hollow core doors are discouraged in favor of solid core doors. Vinyl seal around the edges, gasketed stops or drop bar threshold closers can further reduce sound penetration. Floors and ceilings do not normally need to be acoustically treated; beamed ceilings, however, are acoustically weak and could be modified by the addition of a layer of fiberglass or some other noise resistant material.

Overall interior noise levels can be reduced by extensive use of thick, heavy carpeting, drapes, wall hangings, and acoustical ceiling tiles. They cannot reduce the sound entering the building but they can reduce overall noise levels by reducing sound reverberations. Psychological noise attenuation can be accomplished by masking the noise. Techniques include air conditioning and heating systems, music, the sound of running water, or anything which reduces the perceived fluctuations in noise.

**Barriers.** A noise barrier is an obstacle placed between a noise source and the "line of sight" of the receiver to interrupt the path of the noise. They can be constructed of several different substances or combinations of substances, such as earth berms, walls and fences, or dense plantings of shrubs and trees.

A berm can provide noise attenuation of up to 15 dBA if it is several feet higher than the "line of sight" between the noise source and the receiver. Walls can serve the same function, reducing noise as much as 15 dBA. As mentioned earlier, landscaping is not a very effective method of sound reduction, but it is generally the most aesthetically pleasing. Often a combination of these methods proves to be the best solution. For example, along Bay Boulevard a berm/wall combination could shield noise originating from train operations. At the Temescal Creek park area, a wall with extensive plantings could be most appropriate.



## Footnotes

1. Abstracted from Engineering Corporation of America, Noise Abatement Barrier Study, February 1975.
2. Abstracted from U.S. Department of Transportation, Urban Mass Transportation Administration, Urban Rail Noise Abatement Program Digest, May 1980.
3. Abstracted from U.S. Department of Transportation, Federal Highway Administration, Offices of Research and Development, The Audible Landscape: A Manual for Highway Noise and Land Use, November 1974.

APPENDIX G: CEQA ARCHAEOLOGICAL RESOURCE GUIDELINES (from State of California, Office of Planning and Research, CEQA: The California Environmental Quality Act Law and Guidelines, January 1984.)  
ornia Environmental Quality Act Law and Guidelines, January

- I. CEQA applies to effects on historic and prehistoric archaeological resources.
- II. Public agencies should seek to avoid damaging effects on an archaeological resource whenever feasible. If avoidance is not feasible, the importance of the site shall be evaluated using the criteria outlined in Section III.
  - A. In-situ preservation of a site is the preferred manner of avoiding damage to archaeological resources. Preserving the site is more important than preserving the artifacts alone because the relationship of the artifacts to each other in the site provides valuable information than can be lost when the artifacts are removed. Further, preserving the site keeps it available for more sophisticated future research methods. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.
  - B. Avoiding damage may be accomplished by many approaches, including:
    1. Planning construction to miss archaeological sites;
    2. Planning parks, greenspace, or other open space to incorporate archaeological sites;
    3. "Capping" or covering archaeological sites with a layer of soil before building tennis courts, parking lots, or similar facilities. Capping may be used where:
      - a. The soils to be covered will not suffer serious compaction;
      - b. The covering materials are not chemically active;
      - c. The site is one in which the natural processes of deterioration have been effectively arrested; and
      - d. The site has been recorded.
    4. Deeding archaeological sites into permanent conservation easements.
- III. If the Lead Agency determines that a project may affect an archaeological resource, the agency shall determine whether the effect may be a significant effect on the environment. If the project may cause damage to an important archaeological resource, the project may have a significant effect on the environment. For the purposes of CEQA, and "important archaeological resource" is one which:
  - A. Is associated with an event or person of:
    1. Recognized significance in California or American history or
    2. Recognized scientific importance in prehistory.

- B. Can provide information which is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable or archaeological research questions,
- C. Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind,
- D. Is at least 100 years old and possesses substantial stratigraphic integrity, or
- E. Involves important research questions that historical research has shown can be answered only with archaeological methods.

IV. If an archaeological resource is not an important archaeological resource, both the resource and the effect on it shall be noted in the Initial Study or EIR but need not be considered further in the CEQA process.

V. If avoidance of the important archaeological resource is not feasible, the Lead Agency should include an excavation plan for mitigating the effect of the project on the qualities which make the resource important under Section III.

A. If an excavation plan is prepared, it shall:

- 1. Be a brief summary of the excavation proposed as part of a mitigation plan;
- 2. Be available for review only a need-to-know basis;
- 3. Not include the specific location of any archaeological resources if the plan will be made known to the general public.

B. An excavation plan may:

- 1. List and briefly discuss the important information the archaeological resources contain or are likely to contain;
- 2. Explain how the information should be recovered to be useful in addressing scientifically valid research questions and other concerns identified in subdivision (a);
- 3. Explain the methods of analysis and, if feasible, display of excavated materials;
- 4. Provide for final report preparation and distribution; and
- 5. Explain the estimated cost of and time required to complete all activities undertaken under the plan.

C. The Lead Agency may require a mitigation plan to be carried out as a condition of approval of the project.

VI. A public agency following the federal clearance process under the National Historic Preservation Act or the National Environmental Policy

Act may use the documentation prepared under the federal Guidelines in the place of documentation called for in this appendix.

## VII. Limitations on Mitigation

Special rules apply to mitigating significant effects on important archaeological resources.

- A. If it is not feasible to revise the project to avoid an important archaeological resource, the Lead Agency shall require the project applicant to guarantee to pay one half of the cost of mitigating the significant effect of the project on important archaeological resources.
  1. In determining the payment to be required from the applicant, the Lead Agency shall consider the in-kind value of project design or expenditures intended to permit any or all important archaeological resources or California Native American culturally significant sites to be undisturbed or preserved in place.
    - a. Consideration of in-kind values does not require a dollar for dollar set-off against the payment by the project applicant.
    - b. In deciding on an appropriate set-off, the Lead Agency shall consider such factors as whether the project design or expenditures would provide other benefits to the applicant and whether the design or expenditures required special changes in the project plans.
  2. When it decides to carry out or approve the project, the Lead Agency shall, if necessary, reduce the mitigation measures specified in the EIR to those which can be funded with:
    - a. The money guaranteed by the project applicant, and
    - b. Money voluntarily guaranteed by any other person or persons for the mitigation.
  3. In order to allow time for interested persons to provide a voluntary funding guarantee, the Lead Agency shall not decide to carry out or approve a project having a significant effect on important archaeological resources until 60 days after completing the final EIR on the project.
  4. In no event shall the Lead Agency require the applicant to pay more for mitigation within the site of the project than the following amounts:
    - a. One half of one percent of the projected cost of the project, if the project is a commercial or industrial project.
    - b. Three fourths of one percent of the projected cost of the project for a housing project consisting of one unit.



- c. If a housing project consists of more than one unit, three fourths of one percent of the projected cost of the first unit plus the sum of the following:
    - (i) \$200 per unit for any of the next 99 units,
    - (ii) \$150 per unit for any of the next 400 units,
    - (iii) \$100 per unit for units in excess of 500.
- B. Unless special or unusual circumstances warrant an exception, the field excavation phase of an approved mitigation plan shall be completed within 90 days after the applicant receives the final approval necessary to begin physical development of the project.
  - 1. With a phased project, the mitigation measures shall be completed within 90 days after approval is granted for the phased portion to which the specific mitigation measures apply.
  - 2. The project applicant can elect to extend the time limits for completing the field excavation phase of the approved mitigation plan.
  - 3. A mitigation plan shall not authorize violation of any law protecting American Indian cemeteries.
- C. Excavation as part of a mitigation plan shall be restricted to those parts of an important archaeological resource that would be damaged or destroyed by the project unless special circumstances require limited excavation of an immediately adjacent area in order to develop important information about the part of the resource that would be destroyed.
- D. Excavation as mitigation shall not be required for an important archaeological resource if the Lead Agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the resource, provided that the determination is documented in the EIR.
- E. The limitations on mitigation shall not apply to:
  - 1. A public project if the Lead Agency decides to comply with other provisions of CEQA that apply to mitigation of significant effects, and
  - 2. A private project if the applicant and the Lead Agency jointly elect to comply with other provisions of CEQA that apply to mitigation of significant effects.
- F. The time and cost limitations described in this section do not apply to surveys and site evaluation activities intended to determine whether the project location contains archaeological resources, and if so, whether the archaeological resources are important as defined in this appendix.

#### VIII. Discovery of Human Remains

- A. In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
  - 1. The coroner of the county in which the remains are discovered has been informed and has determined that no investigation of the cause of death is required, and
  - 2. If remains are of Native American origin,
    - a. The descendants from the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or
    - b. The Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission.
- B. Where the following conditions occur, the landowner or his authorized representative shall reinter the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.
  - 1. The Native American Heritage Commission is unable to identify a descendant;
  - 2. The descendant identified fails to make a recommendation; or
  - 3. The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.
- C. If the human remains are discovered before the Lead Agency has finished the CEQA process, the Lead Agency shall work with the Native American Heritage Commission and the applicant to develop an agreement for treating or disposing, with appropriate dignity, of the human remains and any associated grave goods. Action implementing such an agreement is exempt from:
  - 1. The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).
  - 2. The requirements of CEQA and the Coastal Act.



IX. As part of the objectives, criteria, and procedures required by Section 21082 or as part of conditions imposed for mitigation, a Lead Agency should make provisions for archaeological sites accidentally discovered during construction. These provisions should include an immediate evaluation of the find. If the find is determined to be an important archaeological resource, contingency funding and a time allotment sufficient to allow recovering an archaeological sample or to employ one of the avoidance measures should be available. Construction work could continue on other parts of the building site while archaeological mitigation takes place.

Note:

Authority cited: Sections 21083 and 21087, Public Resources Code; Reference: Section 7050.5, Health and Safety Code; Sections 5097.98, 21001(b) and (c), and 21083.2, Public Resources Code; Society for California Archaeology v. County of Butte, (1977) 65 Cal. App. 3d 832.

Discussion:

This appendix responds to problems that have arisen in applying CEQA to archaeological resources. In some areas of the state, full excavations of archaeological sites have been required for nearly every site discovered within the tract where a project would be located regardless of the importance of the sites. As a result, federal officials have noted that in CEQA documents they have found descriptions of archaeological excavations of sites that would not be regarded as important enough to call for excavation under federal law. This experience has shown a need for establishing standards to guide agencies in deciding whether a site would be important enough to call for analysis under CEQA.

While there have been problems in some parts of the state, archaeological impacts have been handled well in other areas. Mendocino County and Santa Barbara County especially have been noted for the excellence of their methods for dealing with archaeological resources. This appendix does not mandate a uniform system statewide so that successful local programs can continue.

The unnecessarily large number of excavations has also involved an unnecessary conflict with Native American values. Native Americans have been upset by people digging up the remains of their ancestors. While archaeology can be carried out in conjunction with Native Americans, and has been done successfully to help Native Americans learn about their ancestors, too often excavations have been carried out without concern for the sensitivities of Native Americans. The approaches described in this appendix should reduce the conflict with Native American values concerning protection of burial sites.

An important principle in this appendix is the emphasis on avoidance of archaeological sites. Avoidance is discussed as a way of avoiding a significant impact in the first place, thereby enabling a project to qualify for a Negative Declaration. Where the proposed project includes a potential impact on a site, avoidance is suggested as a preferred mitigation measure where all other factors are equal. If a project can be altered to avoid a site, the costs and delays involved in an archaeological excavation may also be avoided, and there would be no interference with Native American sensitivities. Possible methods of avoidance are listed



in order to give people ideas of how to proceed. These methods are not exclusive and could be supplemented by other methods at the option of the Lead Agency.

The appendix also identifies standards for determining the importance of the archaeological site and provides that a project would have a significant effect on the environment if it would cause damage to an important archaeological site. These standards are in keeping with the efforts in CEQA to focus on significant effects rather than on all effects. The standards are an effort to focus on archaeological resources that people would generally agree are important rather than requiring protection of all archaeological resources. The standards are consistent with the standards included in AB 952 (Deddeh), Chapter 1623 of the Statutes of 1982. The appendix uses the term "important" archaeological resources rather than "unique" archaeological resources in order to use terminology more closely related to accepted scientific usage. The substance of the standards remains consistent with the bill despite the change in label.

The appendix encourages the preparation of an excavation plan in an EIR as one of several possible mitigation measures for destruction or damage to an archaeological site. The excavation plan is an effort to achieve greater precision in the ways in which any necessary excavation would be carried out. The excavation plan would put a burden on the archaeologist to explain the importance of the site and to demonstrate how the proposed excavation would serve some public interest. The elements listed for an excavation plan are suggested but not required. This approach allows Lead Agencies to take various approaches in excavation plans. The plans are intended to shift the burden to the archaeologist to demonstrate the necessity for an excavation rather than requiring a staff worker in the Lead Agency to deal with unfocused claims of the importance of the site. The Resources Agency has received information suggesting that planners working for Lead Agencies have had difficulty in evaluating claims from expert archaeologists demanding that excavation be allowed. The excavation plan requirement is designed to alleviate that problem.

To conform to the recently enacted Assembly Bill 952, Chapter 1623 of the Statutes of 1982, the appendix identifies various restrictions on archaeological mitigation and cost limitations on archaeological mitigation. These restrictions apply to the CEQA process, and people implementing the Act need to be made aware of them. The appendix reorganizes and clarifies the limitations and adds interpretations with a few subjects from the bill such as offsets and the 60-day delay in approval after completing the EIR.

The appendix also suggests ways for Lead Agencies to standardize their methods of dealing with archaeological resources. The methods could be included within mitigation measures in EIRs or included in the CEQA procedures which an agency is required to adopt by Section 21082 of the Public Resources Code. The appendix also encourages Lead Agencies to deal with the problem of unexpected sites which may be discovered during construction. The appendix does not mandate any particular way to deal with this situation.



The appendix also reflects the protections recently enacted in Senate Bill 297 (Garamendi), Chapter 1492 of the Statutes of 1982, for human remains discovered during excavation. If the human remains are of Native American origin, special rules and procedures apply. The rules and procedures are included here because they are so closely related to the archaeological activities discussed in this appendix.

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